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CESAREAN SECTION FOR PLACENTA PREVIA CENTRALIS.—REPORT OF A CASE*

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The Cesarean operation for placenta previa has for a number of years past been a frequent subject of discussion and, as a routine treatment for this condition, generally condemned, while some go so far as to say that it is never justifiable. Yet a considerable number of surgeons and obstetricians maintain that there is at least one variety of placenta previa, viz.—placenta previa centralis with a normally developed placenta—together with certain other conditions, such as rigid os and deformities which make version a more than usually dangerous operation, where Cesarean section is demanded. Some, however, condemn the operation as entirely unjustifiable as, for example, Murray, who read a paper before the American Gynaecological Society in 1902, at which time

his opinions were generally concurred in by the members of that society.

In September, 1904, Holmes read a paper before the Chicago Gynaecological Society entitled "Cesarean Section for Placenta Previa, an Unjustifiable Procedure," and, while some of the members thought there might be exceptional cases where it would perhaps be justifiable, the society in general supported the views expressed. Cameron, in the *British Medical Journal*, is quoted as saying, "Operators who advise Cesarean section for placenta previa are surgeons of little or no experience in obstetric practice; a skilled obstetrician would never think of such a procedure."

Not all authorities hold these extreme opinions, however. Truesdale (*Boston Medical and Surgical Journal*) believes Cesarean section to be the best treatment for complete or partial placenta previa, when the child is viable and the

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diameters of the pelvis or conditions of the soft parts render the operation of dilatation and version (with sufficient rapidity to save the child) a dangerous procedure for the mother.

Donovan, in *American Gynaecology and Pediatrics*, is still more liberal. He gives the following indications for Cesarean section in placenta previa when the pregnancy has reached twenty-eight weeks or over:

1. Complete previa.
2. Previa in primipara, in presence of severe hemorrhage.
3. When there is a history of previous operative delivery.
4. It should be considered in all cases where version is indicated, if a reasonably skilled surgeon is available and only an ordinary obstetrician.

A short review of the varieties and conditions which may be present, of the ordinary treatment, the difficulties, dangers, and fatality of such treatment, will, I believe, be profitable and I therefore touch upon them briefly.

Classification.—Placenta previa is divided into two general classes, the incomplete and the complete. These again are subdivided; the incomplete into lateral and marginal. In the lateral, the edge of the placenta comes down to the cervical canal and may project into it when dilated. When the edge projects over the internal os, it is termed marginal.

The complete is also subdivided into central and partial. In the first the center of the placenta lies over the internal os. In the second the greater mass of the placenta lies upon one side of the lower uterine segment but projects over

the internal os farther than the marginal variety.

A normal placenta is round or oval, thick at the center, gradually thinning out to the edge, the cord attached at the center. In the central variety, mentioned previously, this would bring the cord attachment directly over the internal os.

Frequency.—Placenta previa is said to occur about once in 1,200 pregnancies, but it is probable that, if it were possible to ascertain all the cases, it would be found to be much more frequent. Many cases are thrown off early and the condition undoubtedly is the cause of many early abortions.

What the proportion of the different varieties is, it is difficult to estimate, but in order of frequency the lateral take first place, the marginal second, the partial third, and the central is the most rare of all. In 270 cases observed by Winckel, 217 were lateral and marginal and 53 partial and central.

Fatality.—Hirst states that the maternal death-rate in general has been about 40 per cent, but in expert hands with proper surroundings this is greatly diminished. He also says a fetal mortality of 50 per cent or over must be expected.

This includes all classes of cases and since the more nearly central the greater the danger to both fetus and mother, it gives little chance to either when the attachment is central or nearly so, even in expert hands. The loss of blood is enormous. Version often results in laceration of the cervix through the placental site which is usually fatal. Should the mother escape death from hemorrhage, she runs great chances of infec-

tion in her weakened and unresisting condition.

Diagnosis.—Hemorrhage during the later months of pregnancy is considered almost diagnostic of the condition. It is not always so, however, as we occasionally have quite profuse hemorrhage with normally attached placenta. It should be considered so, however, until proven otherwise. Recently I had a case sent to my private hospital, having profuse hemorrhage. The physician who saw her said she passed at least a quart of blood. There was no amniotic or other fluid with it as the membranes were unruptured and the blood formed a firm clot. The flowing ceased soon after she reached the hospital and she went a week before labor began. During this week she had one slight hemorrhage, when she flowed about one-half pint. There was no placenta within reach of the finger. The head could be clearly felt through the uterine wall outside the cervix. There was no hemorrhage during labor, which came on spontaneously and, as the membranes came away whole with only the one rent in them through which the child passed, it was easy to locate where the placenta had been attached, which was just below the fundus. The child was alive, strong, and well, and there was nothing to indicate that any hemorrhage had taken place, nor was there any cause apparent.

If a placenta be attached below the child, a digital examination should reveal the fact whether the patient has or has not had hemorrhage. When the finger can be passed through the cervix placental tissue should be recognized. Examined through the vaginal vault and uterine wall, the inability to clearly feel

fetal parts should excite suspicion. It may be difficult or impossible to differentiate between a secondary placenta occupying this position or a membranous placenta, but these must be considered and treated the same as placenta previa, therefore to differentiate is not essential. To differentiate between the varieties may not always be easy, yet a diagnosis between the complete and incomplete can generally be made with comparative ease by feeling the fetal parts through the vaginal vault and the uterine wall. Through the thick part of the placenta they can not be felt at all, through the thin portion, indistinctly, while through the vagina and uterus they can usually be felt distinctly. A suture or fontanelle can generally be felt, if a head presents or some other recognized parts in other presentations. Recognition of a part is not necessary, however; it is rather the distinctness with which some part is felt showing the absence of the thick, soft, spongy placenta.

Treatment.—The indication is, if hemorrhage be present, to control it, dilate the canal and deliver. I believe it good treatment to empty the uterus at any stage of pregnancy, once placenta previa is diagnosed; whether hemorrhage has occurred or not and whether or not the child is viable. There is no excuse for delay, once the condition is known to exist, as delay means added risk for the mother. The indications are best met by applying pressure to the bleeding surfaces, using some part of the fetus when possible for the purpose, using the forceps or doing version as conditions indicate.

When the attachment is central or nearly so, however, this is not practical,

as it is necessary to separate a large portion of placenta or perforate it in order to do so. Here, when hemorrhage is alarming, a firm vaginal tampon will best meet the indication for the time being. The hemorrhage may be thus controlled until the cervix dilates and the placenta separates so the membranes may be reached and thus delivery be completed, or after the bleeding has been controlled for some hours, the placenta may be perforated with greater safety. A mortality of nearly 100 per cent of the children and of a majority of the mothers must be expected in such cases with this treatment even in expert hands. It is fortunate that such cases are very rarely met with. The only one it has been my misfortune to see is one I wish to now report.

On January 14th, of the present year, I received a telephone message about four o'clock in the morning, asking me to come to Battle Creek to see a case of placenta previa. Dr. Gorsline, who telephoned me, thought a Cesarean section might be advisable and asked me to come prepared to do such an operation, should I deem it necessary. Having dealt with many cases of placenta previa in the past, and never having seen one where such operation could be given serious consideration, though I went prepared, I had little confidence that it would be done. Arriving at 10 A. M. I obtained the following history and found the conditions described:

Mrs. N., aged 32 years, married four years.

History from puberty, which occurred at twelve years, to time of marriage, negative except for a mild form of dysmenorrhea. Pregnant once before, delivery occurring fifteen months ago, when placenta previa was present. Marginal variety, the edge overlapping the internal os about one

inch. She was delivered by Doctors Gorsline and Lamoreaux in the usual manner, viz., by rupturing the membranes, turning down the placental edge and using the fetus for a tampon. The child was born dead and the mother suffered great loss of blood, which left her weak and anemic for a considerable time, otherwise she made a good recovery.

Patient in the hands of same physicians this time as previously. They were called the preceding evening, when they found the patient having slight showing, the first that had occurred. The flow was so slight that had it not been for the patient's previous experience only fifteen months before, nothing would have been thought of it. As it was, it was decided to wait. At 3 a. m. she had a mild hemorrhage. Examination gave evidence of a placenta previa centrally attached. The parts were high up, no fetus could be felt from below. Placental tissue could be felt covering the internal os and a soft boggy mass over the entire lower segment of the uterus. At this time the vagina was tamponed, the patient sent to the hospital, and prepared for operation.

I found the patient in very good general condition, pregnant as nearly as could be calculated a little over seven months. There had been no great loss of blood, thanks to the prompt action of her physicians. The child seemed to be fairly well developed and in good condition. The abdomen had been prepared for operation, the vagina still contained the tampon, placed there seven hours before. Both parents were very anxious to save the child, if consistent with saving the life of the mother.

I made all possible preparation for delivery through the natural passages and also through the abdomen. Had her placed upon the operating table, the anesthetizer ready to begin. I then removed the tampon, washed out the clots, filling the vaginal vault, and cleansed the vagina, very little bleeding taking place. Upon examination now I found the parts high up, the external os soft and dilated sufficiently to admit the examining finger easily, where it came in contact with placental tissue. Passing the finger around the vaginal vault outside the cervix, nothing could be felt except a soft boggy mass, no fetal parts could be felt through it, and at no place could a thin portion corresponding to a placental edge be felt.

Through the abdomen the fetus could easily be made out lying high above the pelvic brim, head down, back anterior; nothing corresponding

to a placenta could at any point be made out. My diagnosis was central or very nearly central attachment of placenta, fetus viable, seven to eight months advanced and in good condition, conditions such as to make the prognosis very grave for both child and mother, should delivery be attempted by the natural passage, whereas, in my opinion, Cesarean section was favorable for both; consequently this operation was elected. My examination having started up quite profuse hemorrhage, no time was lost in anesthetizing the patient and opening the abdomen. Considering the contents of the uterus sterile and therefore harmless in the peritoneal cavity, should any escape there, I made an incision only about four inches long, dammed off the cavity as well as possible, cut directly through the uterine wall and membranes, grasped the child by the leg and delivered it. No clamps or any form of constriction of broad ligaments or cervix was used. The uterus contracted down immediately, the child was delivered, and very little bleeding occurred from the incision. The placenta filled the lower third of the uterine cavity and was as perfectly central as possible, a large thick normally shaped placenta, the cord attached directly over the internal os. The child began to cry immediately after it was delivered, so the cord was clamped, cut, and it was handed to the nurse, who was awaiting it.

The placenta and membranes were easily separated and delivered through the abdomen, the uterus contracting down so there was practically no hemorrhage. The patient did not lose one-fourth as much blood by the operation as she did during my vaginal examination and there was no unusual flow following it. Altogether she did not lose more than the average confinement case.

I sutured the incision in the uterus with chromicized catgut, first suturing the endometrium with a running suture, then through and through sutures and a layer of Lembert sutures over these. The incision in the abdomen was closed in the usual manner. The operation was a short one, delivery of the child not taking over five minutes. There was practically no shock. She began to nurse the baby on the third day and for two weeks her progress was as uneventful as an ordinary confinement. She was allowed to be up at the end of two weeks, not by my permission, however; was down stairs on the eighteenth day, and on the same day was taken with pain in leg and chest. Pneumonia and phlegmasia developed and she was very sick for some time, far more sick than after the operation. She finally recov-

ered, however, and is now in remarkably good condition, considering the late complications. The baby also is well and thriving.

This case, to my mind, illustrates a class of cases of placenta previa where the only proper treatment is by Cesarean section. Fortunately they are not common and surroundings and circumstances may render such treatment inadvisable, or if done, unsuccessful; yet I believe it offers more and better chances than any other. In the incomplete variety, where version or forceps can be used, I should say they are preferable, but even here sometimes it might save lives. If there is any question as to the occurrence of placenta centralis, and some men of wide experience have questioned it, expressing the opinion that the condition at full term or near it, is impossible, this case seen by Doctors Gorsline and Lamoreaux, and myself, should settle not only its possibility as late as seven and one-half months, but its occasional occurrence, for viewed from above as we viewed it, there was no possible chance for mistake.

The case is unique, I believe, in the fact of placenta previa occurring in two consecutive pregnancies and inside of 15 months, the only times she had ever been pregnant. No cause for the condition could be discovered in the uterus or surrounding parts. The results were no better than should be obtained in any such case taken in time. In fact not so good for the complications of pneumonia and phlegmasia which undoubtedly were embolic in origin would occur only occasionally and would be as likely to occur after an instrumental delivery as after such an operation.

DISCUSSION.

C. S. Gorslein, Battle Creek: I think that Dr. Lynds has given the case very fully indeed. I would have been caught napping, had I not had a serious condition with the same women 15 months before with only a marginal position, losing the baby and nearly the mother. The pneumonia and phlegmasia were undoubtedly embolic in origin. Had both legs affected. The patient getting up when she did was entirely through a misunderstanding on her part.

As soon as pregnancy was diagnosed a third time, I believe one would be justified in emptying the uterus to avoid a repetition of the previous conditions.

E. T. Abrams, Dollar Bay: I do not believe anyone would be justified in bringing on an abortion just because the patient had had two, three or five abnormal implantations. I think, however, that emptying the uterus is justified when you know that you have a placenta previa.

J. H. Carstens, Detroit: I believe, with Dr. Abrams, that placenta previa in a previous case does not justify the emptying of the uterus. The uterus should not be emptied unless placenta previa is recognized. Wait until you have the trouble and handle it as it comes along. I think it is the consensus of opinion that Cesarean section is not to be preferred in placenta previa as a rule, but only in the rare cases. It seems to me that ordinarily we get along all right with the ordinary treatment. Tampon and watch, and then do a version. I think the mortality is not very high. Once in a while Cesarean section is justifiable. In general, opinion is opposed to it. I think the general practitioner would prefer version. The trouble with the statistics in the children is that they are premature, being mostly in the fifth or sixth month, and rarely at term. The children are not viable. The maternal mortality is great owing to the danger of infection in handling the raw surface of the uterus where the placenta has been removed. This is lessened where you have strict asepsis.

Rolland Parreter, Detroit: It seems to me that this case reported by Dr. Lynds would have

been a very valuable one for vaginal Cesarean section, as advised by Bumm. I would like to have other opinions on this.

Dr. Lynds: As to what should be done in regard to the case I reported becoming pregnant, I don't think you could do anything unless it was proven that a similar condition existed. This could be done before she was in any great danger. If she becomes pregnant she will be anxious to put herself under the care of a physician.

In regard to vaginal Cesarean section in such a case, I would say that it is just to avoid meddling with the parts, that you go through the abdomen. I do not see as there would be anything gained over delivering through a hole in the placenta. Experience has shown that a laceration through the cervix gives a hemorrhage that is very hard to control. And to deliver by splitting up the cervix as you would have to do to deliver the child, would be entirely wrong. Operate from above and get the uterus to contract down before the placenta is discharged. The hemorrhage is practically under control.

It is true, no doubt, that a large per cent of the mortality is because the children are not old enough to live. The circulation is cut off and the child born dead from using the child as a tampon, or there is an interference with the placental circulation. There is also the danger of lacerating the cervix through a too rapid delivery. The sacrifice of the child is secondary and to be more or less expected in case you are working to save the mother. If you can control the hemorrhage, there is no need of great activity, you can wait until the parts are dilated, even if it takes hours. It is only in those cases where the hemorrhage is uncontrollable that you must proceed rapidly and take your chances of further hemorrhage.

Lacerations, of course, increase the danger of infection. The danger of infection in placenta previa is greater than in ordinary cases. Not only from the handling, but also from the weakened condition of the patient.

A FATAL CASE OF ECLAMPSIA, AFTER THE DELIVERY OF TWINS. REMARKS ON THE ETIOLOGY AND PATHOLOGY OF THE DISEASE*

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The following case is, I believe, of sufficient interest to present at this time. While the pathologic findings are not altogether easy of interpretation, still they are significant. It is only by a careful detailed study of every case of eclampsia coming to our notice that we may ever hope to ascertain the real cause or causes of this obscure disease.

Gynecologic No. 1235. Miss B. Age 16. German, single, schoolgirl. First pregnancy. First seen in the eighth month of gestation.

Family History. There have been numerous twin pregnancies in both paternal and maternal families.

Personal History. Negative. Has always been well and strong.

Examination (April 22, 1905). The patient is well nourished and weighs 125 pounds. There is moderate edema of the ankles. The skin, mucous membranes and joints are normal. The lateral lobes of the thyroid gland are moderately prominent. There is increased vesicular breathing over both lungs. The area of cardiac dullness is pushed upward. The valve sounds are normal. The radial pulse is 80.

Special Examination. The breasts are markedly enlarged, showing striæ; the areolæ and

nipples are negative. The abdomen is greatly distended from the pubes to the ensiform, being more prominent than the normal full term pregnancy. The striæ are very numerous. A transverse furrow or depression at the level of the umbilicus separates the enlargement, superficially, into two unequal eminences, the upper being the larger. The fetal small parts are very prominent on both sides. Two fetal hearts can be located, one in the upper right, the other in the lower left quadrant, rate 142 and 135 respectively. Vaginal examination shows the usual signs of pregnancy. The blood and urine examinations reveal nothing abnormal.

May 4, twelve days later, at 9 a. m., the patient began to have rather severe labor pains, accompanied by nausea and vomiting of a mild grade. She was kept in bed and given morphine. After a short remission the pains came on again.

May 5, 8 a. m. For the last twelve to fourteen hours the pains have not been strong. As the patient had passed no urine during this time, she was catheterized and 1000 c. cm. of clear urine obtained, which on examination showed no precipitate on boiling and adding nitric acid. Heller's test was negative. The urea estimated at 0.3 gram. per 100 c. cm., or 3 grams in twelve hours. Neither casts nor blood were present. At this time it was noted that the patient answered questions with hesitation and appeared somewhat stupid. Three hours later, vaginal examination showed the os dilated to admit three fingers, membranes unruptured, head of the first fetus at the level of the superior strait. The membranes ruptured about 2 p. m. and shortly

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afterward the feet of one fetus were found prolapsed, the head of the other presenting at the inlet. The patient was anesthetized and prepared for operative delivery. The os was dilated manually and the prolapsed extremities pushed up. The small presenting head was fixed in the pelvis by supra-pubic pressure in an O. L. A. position, high forceps applied, and the child delivered without difficulty. The second child was extracted by the breech. Both were females. Respiration was induced only after prolonged effort. The single placenta came away entire. A slight perineal tear was repaired at once.

One hour after delivery the mother had a typical eclamptic convulsion. Consciousness had not been regained. Croton oil was given, salt solution was administered by hypodermoclysis and by rectum, and veratrum viride tried. The convulsions, however, recurred rapidly, chloroform even not fully controlling them. In spite of all that could be done, the patient died within ten hours after delivery, having had between 30 and 40 convulsions.

Examination of the urine obtained by catheter four hours before death was as follows: Color pale, slightly turbid, specific gravity 1007, reaction acid. Albumin (heat and nitric acid), 1/5 by volume, urea 0.35 gram per 100 c. cm., few red blood cells, few leucocytes, a small number of granular casts.

It is of interest, in its possible etiologic relationship to the eclampsia of the mother, to note that both children developed a marked icterus which disappeared very slowly. Both lived.

Autopsy ten hours after death, by Professor A. S. Warthin.

Brief of findings in principal organs.

Brain. No evidences of thrombosis. Brain tissue soft. Marked edema. Section shows edema and congestion. **Heart.** Pericardial fluid increased. Valve flaps negative. The auricles contain white agonal clots. **Lungs.** Pleurae negative. Marked congestion and edema. No thrombosis nor embolism. **Liver.** Capsule negative. The whole organ is enlarged, especially to the left. Consistency rather soft. Central veins congested. Peripheral portions of the lobules are light and have a slight fatty shine. **Spleen.** Congested. **Kidneys.** Edematous and congested. Both ureters somewhat dilated, more marked on right side, especially above the pelvic brim. Both pelves dilated and chronically thickened. **Intestines** show lymphoid hyperplasia and congestion. **Thyroid.** Lateral lobes somewhat en-

larged, right lobe 4 x 2 x 1.5 cm., left lobe 4.5 x 2 x 1 cm. The isthmus is very narrow, being represented by a small bridge of tissue. Neither external nor internal parathyroids were found. **Hemolymph nodes** and retro-peritoneal glands hyperplastic and edematous. **Uterus, ovaries,** etc. The uterus is enlarged, interior shows results of a recent delivery. Small amount of bloody lochia. Cervix large and soft, os patulous. Both ovaries normal, right contains corpus luteum of pregnancy. Vagina and vulvar opening relaxed and edematous.

Microscopic Examination.

Lungs. Markedly congested. Marked embolism of bone marrow giant cells. Syncytial "giant cells" in small numbers.

Liver. Practically normal. Slight fatty infiltration. No evidence of necrosis. No thrombi.

Kidneys. The most marked change is a necrosis of the tubular epithelium in certain areas. Professor G. C. Huber has very kindly identified for me the location of this change and, according to his opinion, the distal portion of the proximal convoluted tubules is the seat of the lesion. In other parts of the uriniferous tubules there is slight cloudy swelling and, in places, a very moderate desquamation of the epithelium. There is only a slight inflammatory change. A small amount of granular material can be found in a few of the tubules. No albuminous exudate in the glomerular capsules. Few round cells in the interstitial tissue. A small number of tube casts are present.

Thyroid. The colloid is much decreased and, in many places, takes the eosin stain only faintly. Most of the alveolar spaces contain no colloid and the epithelium forms papillary folds or irregular projections. Many of the alveoli are filled with desquamated cells.

There are so many conflicting opinions expressed by different authorities as to the cause of eclampsia that it has been termed by Zweifel "the disease of theories." A brief review of these theories of origin I shall attempt to classify roughly under the following heads:

1. **Kidney.** Rayner, in 1839, found albumin in the urine of pregnant women having convulsions. A renal genesis of

the disorder was at once suspected and the view is quite widely held today that the kidney lesions are the primary cause of eclampsia. Herzfeld and Mynlieff have resurrected Halbertsma's theory of mechanical interference with excretion of urine by compression of the ureters. Ahlefelder, however, last year reported a case of hydronephrosis at term from compression of a ureter, without eclampsia. In advanced carcinoma of the cervix it is well known that chronic dilatation of the ureters may produce no symptoms whatever. Many cases of eclampsia have been reported in which there have been no marked kidney changes and no albuminuria. (Charpentier, Schroeder, Bouffe de St. Blaise, Schmorl, Olschhausen, et al.) On the other hand, grave renal lesions may be present in the disease without albumin in the urine.

The renal changes in the majority of instances consist, according to Meyer-Wirz, in a parenchymatous degeneration of the cells of the tubules. In an analysis of 117 cases, there were old kidney lesions in eight. Inflammatory changes were rarely found. Bouffe de St. Blaise states that the kidneys in eclampsia show changes resembling the necroses in infectious diseases. Bell reports a case of eclampsia coming to autopsy in which there was a necrosis of the cells of the convoluted portion of the uriniferous tubules. The glomeruli were unaffected.

2. **Liver.** While hepatic lesions were noted in many cases coming to autopsy and the cholemia of pregnancy had been described by Frerichs, who with Rokitansky (1857) had observed the condition of acute yellow atrophy in pregnant and puerperal women, still no very definite view concerning the possible hepatic

origin of eclampsia was advanced until Jürgens published his findings in 1886. He concluded that hemorrhagic necrosis was a more or less characteristic lesion in this affection. The almost constant presence of hepatic changes has been observed by many since this time, notable among whom are Schmorl, Pillet, Bouffe de Sainte Blaise, Meyer-Wirz, Ewing, Stone, Edgar and Williams.

In a rather recent article, Ewing lays stress on the changes in the liver in all cases of eclampsia coming to his notice. He makes a division of the disease into three classes, as determined by the type of hepatic lesion: 1. Hemorrhagic hepatitis: The liver is of normal size, and the surface and section show numerous hemorrhagic foci. Microscopic examination reveals marked degenerative changes with many points of necrosis. He says: "This lesion occurs practically without exception in all typical cases of acute fatal eclampsia at term, and in at least 95% of all cases of any variety of eclampsia. It is pathognomonic of this type of the disease." 2. Acute yellow atrophy: The liver is reduced in size. On section is mottled red and yellow with hydropic and fatty degeneration of the central and intermediate zones, a surrounding area of necrosis, and externally a narrow peripheral zone of cells showing slight change. 3. Eclampsia with minimal hepatic lesions: In this class there are no gross changes. Microscopically there is a diffuse granular and fatty degeneration, foci of necrosis, and areas in which the liver cells are distended with bile pigment. Stone concludes that the clinical characteristics of toxemia of pregnancy, eclampsia, and acute yellow atrophy of the liver "war-

rant the definite statement that they are one and the same disease." Williams doubts that these conditions are the same in etiology but confirms the view that characteristic liver lesions are found in eclampsia. Those who believe that liver changes are primarily the cause of the disease have formulated the theory of "hepatic insufficiency," assuming that the functional failure of the liver results in an altered metabolism with the development of various grades of toxemia.

3. **Intestine.** An intestinal origin of the poison causing puerperal convulsions has been suggested by a number of observers. (Budin, Chamberlent, Brown, Savory). Constipation certainly seems to be a predisposing cause, but in cases of eclampsia it is not always met with, and if it were the actual causative factor, convulsions of pregnancy would be the rule.

4. **Thyroid and parathyroids.** Lange (1899) in 25 cases of pregnancy without enlargement of the thyroid gland, noted in 20 the presence of albuminuria. When the thyroid is enlarged he found that the administration of thyroïdin caused a decrease in size of the gland. Nicholson, in a number of late articles, confirms Lange's observations and advocates the use of thyroid extract in eclampsia, reporting a number of cases so treated. It is believed the thyroid system has as a function the production of substances which neutralize the deliterious products of nitrogenous metabolism. Nicholson's theory may be summarized in his own words: "In some pregnant women, for reasons which are at present obscure, the supply of iodothyron in the tissue becomes, gradually or suddenly, insufficient for the needs of normal metabol-

ism. Coincidentally, certain toxic substances (intermediate or imperfectly converted products of nitrogenous metabolism) find their way into the circulation. These toxins, by their special property of contracting the blood vessels, eventually lead to the arrest of the renal secretion. With the suppression of urine convulsions occur, and these do not seem to differ essentially from the fits of ordinary uremia. A deficiency of iodothyron is the primary fault." Others suppose that there is a specific antitoxin formed in the thyroid system which neutralizes poisons generated in the placenta. Nicholson in all his writings, however, assumes, much more than he demonstrates. For instance one report deals with a case of antepartum eclampsia in which thyroid extract was given after the patient had been delivered, the good recovery being attributed to the use of the thyroid preparation. Immediate delivery as a routine procedure has reduced the mortality from eclampsia in Zweifel's clinic from 28.5% to 11.25%, so that the medication in the above case can not be said to have established even the possibility of a favorable result. However, many cases have been reported by various men with apparently much benefit from the use of thyroïdin. Vassale, Zanfragnini, and others have recently employed parathyroid extract in certain cases of eclampsia and here too, the results have been favorable. The function of the parathyroids is not at all understood, Vincent and Jolly, and MacCallum, from numerous experiments, show that removal of the thyroid alone produces symptoms which come on slowly, whereas removal of the parathyroids often gives rise to acute convulsive

attacks followed by death. In the case now reported we failed to find any parathyroid tissue. Whether this is of any special significance I am not prepared to say.

5. **Placenta and Fetus.** The ovular theory of eclampsia. It is believed by many among whom are Dienst, Fehling and Kehrler, that toxins resulting from fetal metabolism find their way into the maternal circulation and give rise to eclampsia. Dienst, as a result of his experiments, concludes that in eclampsia there is an abnormal permeability of the placenta which allows the fetal poisons to pass over into the mother's blood. The syncytium is thought by Veit and Scholten, Schmorl, Meyer-Wirz, Behm, Graefe, and others to produce the poison in eclampsia. This toxine is supposed to exert a hemolytic action and accounts for the thrombi found in the different organs. Time does not allow me to go into details, but the recent experimental work of Politi (1903), Capaldi (1903) and especially Liepmann (1905), regarding the toxicity of the placenta in eclampsia is certainly suggestive. With all allowance for errors of technic, accidental infection, etc., it would appear that there does exist a placental toxine in eclampsia.

6. **Other theories,** I can merely mention. The disease has been ascribed to circulatory disturbances in the brain, infection by bacteria, tumor-like proliferation of the syncytium, and lately, Zweifel has found lactic acid in the blood which he believes causes the convulsions.

The clinical and pathologic evidences certainly suggest a toxemic origin of the convulsions, but the toxine has never been isolated, and the results of experiments directed with a view to show the

presence of poisons in the blood serum and urine have been so inconstant as to make practically all the work along these lines of no value whatever. Bouchard, Volhard, Ludwig and Savor, Tarnier, Doloris and Butte, and others appeared to demonstrate that poisonous substances exist in the blood and urine. However, Schumacher, Stewart, and Olivier showed that the methods employed were open to criticism, and themselves conducted experiments with negative results. Semb, by a preliminary careful immunization of his animals against the toxic action of normal blood serum, has recently found that the injection of serum from eclamptics is fatal in a large majority of cases.

In the case now reported the most important points to be emphasized are the absence of hepatic changes beyond those normally occurring in pregnancy, and the presence of the pathologic alterations in the kidney and in the thyroid gland.

The kidney lesion is a coagulative necrosis of the epithelial cells of the distal portion of the proximal convoluted tubules, with a beginning degenerative change in other portions, and slight acute inflammation. The renal changes may be explained on the ground that the toxine passes through the cells of the convoluted tubules, which, according to Ribbert, have some secretory function.

The significance of the change found in the thyroid is not at all clear. Whether it represents an over activity, a condition of functional derangement, or a state of insufficiency, is problematic. It is possible that we are dealing with a case of exophthalmic goiter not recognized during life, although this does not seem probable. The changes resemble those found in Grave's disease, but are

not exactly typical. It is now generally considered that exophthalmic goiter represents a hyper-activity of the gland or a condition of deranged function. The decrease in the amount of colloid might presuppose a diminished production of normal secretion, or, according to Lange's theory, a thyroid incompetency. From a single case we can only theorize and that with much mental reservation. By analogy, however, it seems that we are dealing with a condition of hyperthyroidism. This hyperthyroidism may have been induced by an increased demand for thyroid secretion to act as an antitoxin to a poison formed in the placenta which in the case of twins would in all probability be in much larger amount than in single pregnancies. The hyperthyroidism might then be only apparent, and in reality an insufficient quantity of secretion formed for the particular needs of this individual. On the other hand an over-production of specific secretion might in itself constitute the real danger. This being

the case antithyroid medication would be indicated.

In drawing conclusions from this one case and from the literature we may infer:

- (1) That eclampsia is due to a toxemia, the origin of which is not known but which, in the light of recent investigation, is quite possibly of placental genesis.
- (2) That characteristic hepatic changes are not present in every case of the disease, and when occurring are probably secondary.
- (3) That in rapidly fatal cases the kidneys as eliminative organs will probably be first affected by the poison and will show the chief changes in the epithelium of the distal portion of the proximal convoluted tubules, and,
- (4) That alterations in thyroid gland function may be directly or indirectly responsible for the development of the toxemic state resulting in eclampsia.

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DISCUSSION.

J. G. Lynds, Ann Arbor: The question of eclampsia is wide and interesting and one we know very little about, and we do not seem to get knowledge on the subject very rapidly. The cause is entirely unknown. There are a great many theories, but what the poison is or where it originates is absolutely unknown. Different theories in different cases seem to have some weight. Taken all together I do not know that they do. In some cases all theories seem to fail.

E. T. Abrams, Dollar Bay: It is well for the practitioner to have outlined some line of treatment which he proposes to adopt when he encounters a case of eclampsia. If he doesn't, he is like a mariner at sea, without a compass. It seems to me, as I look back on my own practice, the best results have been obtained by the eliminative treatment. I believe in the old practice of bleeding in such cases. When called and you find the child is viable, you are going to allow labor to proceed to its legitimate end. Therefore, I would bleed the patient and get rid of as much of the poison as possible, and replace the blood by saline injection. There are too many who deliver immediately and make bad matters

worse. First bleed, then transfuse, then deliver. Never the other way about.

We do not know the cause. It is a good deal like the vomiting in pregnancy in that regard. We have to try many and various remedies to combat the trouble and often nothing has any appreciable effect.

However, what I have said will give my line of treatment and I have had fairly good success.

J. H. Carstens, Detroit: We really know very little about eclampsia. We all have our theories. Here was a case that was carefully examined and nothing found. Two weeks after she had eclampsia. It is pretty strong evidence of a bad case. I believe in quick delivery, because we find that by delivering a majority are relieved of the convulsions. Where the convulsions come on after delivery, our treatment is of little avail.

H. W. Yates, Detroit: I gather from the paper of Dr. Parnall that we should get as far away from the old idea as possible, of the kidney and urinary organs being the cause of eclampsia, and that there is some internal change, which we do not know, that is the cause. There is a strong sentiment in favor of the metabolic cause.

IODIZED CATGUT*

W. T. DODGE, M. D.,
Big Rapids.

For many years I have used the commercial brand of catgut known as the "Red Cross" with confidence that it was thoroughly sterilized by boiling in cumol and that the double envelopes efficiently protected it from reinfection. When infected wounds occurred, after aseptic operations, I attributed the incident to defective technic on my part or on the part of my assistants and redoubled my efforts to sterilize my hands and everything coming in contact with my patient. So little difference in results were noted by the use of rubber gloves that I did not adopt them for all cases until May, 1905, when, after a visit to the east I was convinced that I could no longer afford to abstain from their use. Still my percentage of suppurating wounds in clean cases continued about the same as before. At the Petoskey meeting of the State Society, Dr. S. C. Graves, of Grand Rapids, read a paper upon the subject of catgut and presented statistics showing results in his practice from the use of various commercial brands. I noted that his percentage of suppurations after using "Red Cross" catgut was very large and determined to commence the use of that of some other manufacturer.

Shortly after, an article appeared from Dr. N. Senn, of Chicago, upon iodized catgut prepared according to the method of Claudius. Dr. Senn stated that he had used this catgut for several years with uniformly favorable results. Several years before, the same author had published a similar paper, and I had then prepared some catgut according to this method, but unfortunately the strands I examined had become so fragile that they were useless, and I had not persevered in its use. With my attention called so vividly to the possible dangers of catgut prepared by commercial houses, I determined to make a thorough clinical test of the Claudius catgut and have since used it to the practical exclusion of all other suture material with great satisfaction to myself and with, I am sure, the saving of much time, pain and danger to my patients.

Iodized catgut is prepared by loosely winding raw catgut upon glass spools and immersing in the following solution for eight days:

Iodine resublimed.....	1 dram
Potass. Iodidi.....	1 dram
Aqua Distilled.....	100 drams

It is then transferred to 1% iodine solution in alcohol or to a 10% iodoform solution in alcohol, where it will gener-

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ally maintain its strength indefinitely. In fact I have now some strands of catgut that I placed in the aqueous solution in June, 1903, that are still strong and fit for use. It so happened that the strands I examined at the time were fragile, but others remaining in the bottle for more than two years, maintained their strength.

I now know that the reason for the complete loss of tensile strength in some strands was due to their having been wound tightly upon the spools. This point was brought out by the paper of Nancrede, Waldron and Tenney at the Petoskey meeting last year. The gut should be wound on the spools loosely and if this is done it will be found to preserve its tensile strength indefinitely.

When preparing for an operation I have the nurse remove the gut from the solution and rinse off the iodine in a bowl of sterile water. If left in water too long it becomes friable, so after thorough rinsing I have it transferred to a sterile towel and then it is ready for use. So prepared, the gut is perfectly black, pliable and strong and lasts in the tissues much longer than does the cumol gut.

I have collected statistics of my clean cases at the hospital from Jan. 1, 1905, to May 1, 1906, limiting the cases to those operated upon by myself and to hospital cases, because all the other conditions surrounding these patients were as near alike as possible. The same method of skin preparation was used in all and the same personal equation was operative in all.

I divide the cases into three classes. The first class consists of 21 cases operated between January 1st and May 1st,

1905, in which rubber gloves were not worn by the operator or assistants. Of these, five suppurred, or 23.7%. From May 1st to July 1st, 20 cases were operated, rubber gloves being worn by operator and assistants. Of these four suppurred or 20%.

These nine cases of suppurating wounds were all cases of marked infection in which sloughing of the tissues occurred, delaying union from three to six weeks and making it necessary to open up the wounds throughout and pack with antiseptic dressings. "Red Cross" catgut was used in all these cases. During July and August, I was away from home and did no operating. From September 1st, 1905, to May 1st, 1906, I operated 50 clean cases at the hospital with three suppurations, or 6%. In the first 40 of these cases, I had 100% of primary unions. Iodized catgut was used in all these cases but in the three suppurating cases the gut was prepared in 1% alcoholic, instead of an aqueous solution of iodine. In one of the suppurating cases only was there a complete breakdown of the wound. It was a complete abdominal hysterectomy for an eight-pound fibroid having its center of development well down on the cervix, thus obstructing the uterine canal and preventing perfect preparation of the vagina. When the vagina was cut across, a considerable quantity of discharge was seen to be passing from the uterus and the cellular tissue above the vagina as well as the abdominal incision became infected. After suppuration stopped, the wound was closed by secondary sutures and healed kindly. One of the other cases was a resection of eight inches of the transverse colon in

which a little pus formed at the lower angle of the wound which, however, did not materially interfere with healing, as the wound was firmly closed and the patient out of bed in 14 days. Possibly slight infection occurred from the divided bowel.

The third case had also a slight discharge from the lower angle of the abdominal wound following removal of a seven-pound sub-peritoneal fibroid. The discharge only showed on one occasion and the patient was able to leave the hospital on the eighteenth day. So, practically speaking, all but one of the 50 cases had primary union of the wounds and the source of the infection in that case was obvious. I might well have omitted it from this list as not a clean case.

When I first commenced the use of

iodized gut, I had a number of cases in which there was, a few days after the operation, a discharge of a dram or so of bright claret colored serum. It seemed in no case to interfere with the prompt healing of the wounds and since rinsing the gut more thoroughly in water before using, I have not seen it. In addition to these cases, I have frequently used the iodized gut in infected cases or where infected fluids came in contact with the wounds, in which the iodine in the gut caused it to resist the infection. I believe that the iodine not only renders the gut sterile, but gives it an antiseptic property that enables it to resist the action of septic germs. As it is easy to prepare, pleasant to handle, and withal, inexpensive, I see no occasion to further experiment with the expensive products of the commercial houses.

DISCUSSION.

W. H. Hutchings, Detroit, had recently conducted experiments in heating catgut in absolute alcohol in sealed glass tubes by steam under 15 lbs. pressure. This had failed to kill anthrax, and the method seemed to be ineffectual.

J. N. Bell, Detroit, related a case, recently operated, in which a No. 2 catgut had not held and

the patient died of hemorrhage.

E. C. Taylor, Jackson, had adopted iodized gut in January, 1906, and has had no sepsis since this change from the commercial gut.

Dr. Dodge: Iodized gut lasts ten days, and is pliable and convenient.

The Poison of the Meningococcus.—**A. P. Ohlmacher**, Detroit, by experiments on horses has demonstrated the existence of a powerful poison from the meningococcus, the effects of which are best manifested by intravenous injections of a filtrate through paper of a trikresolized extract of a three to six weeks' culture on a glucose-chalk-bouillon. The symptoms produced are restlessness, increase of pulse, temperature and respiration, profuse perspiration, together with the special nervous symptoms of progressive asthenia, tremors, clonic convulsions and transient opisthotonus, excessive irritability, spasms being

caused by noises or unexpected touch, and finally death from exhaustion. The nervous manifestations were best produced by the special culture product above mentioned, but ordinary broth cultures were also toxic; sufficient subcutaneous doses of the special extract, besides causing fever and extensive local swelling, also gave rise to the nervous symptoms. The poisonous effect was absent when the fluid was filtered through unglazed porcelain bougies or balloons, but was present and active in the product of filtration through Berkefeld candles or paper.—*Jour A. M. A.*, July 21, 1906.

SYSTEMIC DISTURBANCES SECONDARY TO PATHOLOGIC CONDITIONS IN THE NOSE*

J. E. GLEASON, M. D.,
Detroit.

In the few minutes at my disposal, it is impossible to enter extensively into a discussion of secondary disturbances caused by pathology in the nose. I have therefore, confined myself to certain symptoms which are related more especially to internal medicine, and which were well illustrated by the following case of chronic empyema of the accessory sinuses, which I have recently had occasion to follow:

A lady, 31 years of age, came under observation Oct. 16, 1905, on account of dull headache localized in the forehead and right temporal region, which had been a more or less constant symptom for nearly ten years. Recently on account of its severity, she had lost one or two days a week. When stooping over, she experienced a marked flushing of the face, associated with a feeling of fullness of the head, dizziness and the appearance of black spots before the eyes. Since the previous July, she had had attacks of palpitation of the heart, with tachycardia, brought on by slight exertion or excitement. She had been treated for stomach trouble without relief. Correction of her hyperopia by a careful oculist had also failed to relieve her headaches. Some temporary relief was afforded by the use of headache powders to which she had been compelled to resort. She had practically given up all society and was greatly discouraged over her condition. The following notes taken from my records, show the condition at that time: The patient is a slight, nervous woman, markedly underweight for her height. Complexion is some-

what sallow. Haemoglobin 70%; urine examination negative. Examination of nose shows the right nostril filled with crusts and secretion, after removal of which there is seen a markedly atrophic inferior turbinate. The middle turbinate is large with moderate atypical hypertrophy of its mucous membrane. From the middle meatus flows a white, muco-purulent discharge, which is renewed as soon as removed. The post-pharyngeal wall is dry and glistening, and covered above with crusts. There is no secretion from the sphenothmoidal recess. The left nostril shows a moderate hypertrophic rhinitis. Diagnosis—Empyema of one or more sinuses of the lower series. By a process of exclusion, a diagnosis of chronic empyema of the right frontal and anterior ethmoidal sinuses was made. Intra-nasal treatment, by affording free drainage, soon relieved the pain, and in the course of a few months gradually reduced the amount of secretion, until at the last examination, May 7th, it has practically disappeared. The patient's weight has increased nearly 15 pounds; the haemoglobin is 90%; the headache and stomach symptoms are practically absent and the patient has not felt as well in years as she does today.

This case, thus briefly outlined, illustrates fairly typically the most important of secondary disturbances characteristic of chronic suppuration within the nose. In these conditions headache is a frequent, but by no means a constant symptom. In a majority of cases, a dull pain is experienced in the frontal region, although temporal and occipital headache are by no means uncommon. Duration, as well as intensity, show great varia-

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tions. There may be days or weeks of relative relief from pain, alternating with periods of intense headache. This periodicity may be dependent upon either local causes, or upon psychical disturbances or mental exertion. Too much stress can not be laid upon the latter. Many of these cases go their life long with a diagnosis of nervous headache without a suspicion of its nasal origin. Hajek claims that practically all the so-called nervous headaches are due to pathology within the nose. At any rate, such a diagnosis should never be accepted until thorough examination of the nose shows the absence of an empyema or other sufficient local cause.

Symptoms on the part of the respiratory tract secondary to empyema of the sinuses are most frequently inability to breathe through the nose, the result of changes in the nasal mucous membrane in the form of hypertrophies and polyps. Dried secretion may also occlude the nares. Reflex disturbances, as evidenced by asthmatic attacks, are not uncommon. A diseased pharynx with repeated attacks of angina, and by continuity a diseased larynx arise from the continual bathing of these parts by secretion flowing backward from the nose. Cases of this kind are too often treated indefinitely by sprays and applications while the primary existing condition within the nose is overlooked. In the very old cases, chronic bronchitis with emphysematous changes in the lungs follow the chronically inflamed condition of the upper air passages.

Gastro-intestinal disturbances are often simulated by nausea produced by the irritable condition of the throat, and the endeavor to expell dry secretion from

the nasal-pharynx. Chronic gastro-enteritis, however, does result from the continued swallowing of large quantities of secretion, and such a condition naturally resists all local treatment. Bad taste and nausea appear generally in the morning, the recumbent position occupied during the night favoring the inundation of the pharynx by the secretion.

Other symptoms of a somewhat indefinite nature characteristic of chronic suppuration within the nose, are illustrated in this case, and are exceedingly important, because when dominating the clinical picture they are often misinterpreted. I refer to the so-called congestion and depression conditions as emphasized by Hajek. These consist in various vasomotor and nervous disturbances which are generally suggested by the term neurasthenia. Among the former are to be mentioned flushing of the face associated with cold extremities, palpitation of the heart and tachycardia, coming on as a result of various external stimuli. I remember a patient of Hajek's who at each meal experienced just these symptoms, at times so pronounced that he was obliged to leave the table. That man was cured by drainage of a chronic empyema of the antrum of Highmore.

Such patients sleep badly and are therefore incapacitated for their daily duties, and become extremely irritable and morose. Especially is this true when there is associated with these symptoms a chronic headache. Such patients are in line to become hypochondriacal or melancholic. That such conditions should result is not to be wondered. The wonder is that the significance of a profuse discharge from the

nose should so often escape the notice of the patient for so long a time. He dismisses it under the supposition that it is a chronic cold or an evidence of catarrh. It therefore devolves upon the physician in the course of his examination to bear in mind that general disturbances may result from pathology within the nose, and to make a routine

practice of nasal examination of all suspicious cases. Secretion, soon renewed after thorough cleansing, crusts, polypi, atypical hypertrophies, and atrophy are all suspicious local signs. Careful search for them together with proper appreciation of their significance will often result in mutual advantage to both the patient and to the physician.

CONCERNING THE TREATMENT OF TETANUS*

W. H. HUTCHINGS, M. D.,
Detroit.

It is not my intention to take up valuable time of this society with any extended review of the voluminous and altogether satisfactory literature of this disease, or to comment on the interminable statistics which have been compiled concerning it. I would rather speak briefly of some of the principles involved in its treatment and make some suggestions as to how the establishment of morbid conditions may be prevented, or when once established, combatted.

In the management of tetanus, we have two things to consider. First prophylaxis, and second, treatment of the disease after the symptoms have appeared. In the prophylaxis we must give our attention first to the wound. As is well known, there are certain wounds which are more likely to be com-

plicated by tetanic infection than others, the so-called fourth of July injuries, punctures with nails, rake teeth, etc. When called upon to treat any case in which we have reason to suspect the probability of tetanic infection we must be most thorough in our local treatment. The wound should be widely opened, curetted, the deeper parts searched for pieces of cloth, wads, and other foreign materials, thoroughly washed with hydrogen peroxide, which performs the double function of mechanical removal of infected material and the bringing of free oxygen into the deepest part of the wound, then packed with iodoform or iodine gauze. In the treatment of these wounds we should use no disinfectants that will cause an eschar, the formation of which, by preventing the access of air, gives the tetanus bacilli ideal conditions for development. Above all we must disabuse our minds of the idea that

*Read before the Surgical Section at the Jackson meeting of the Michigan State Medical Society, May 23-25, 1906, and approved for publication by the Publication Committee.

any of the ordinary disinfectants will destroy tetanus spores present in a wound. These are among the most resistant of micro-organisms and carbolic and bichloride in the usual strengths have little more effect on them than water.

After thorough local treatment we should in every case give prophylactic doses of anti-tetanic serum. I consider it of importance that these prophylactic doses should be repeated on successive days. We should not trust to one injection as it is not possible to determine at just what time in the course of the disease tetanus bacilli begin to develop. I will not go into the statistics, but will say that in both veterinary and human practice its exhibition has proven of greatest advantage, so much so that in many foreign surgical clinics, every case of recent injury is given this treatment.

Let us now consider the treatment of the disease after the appearance of the symptoms, for it has been well said that the beginning of symptoms is the beginning of death from the disease, not the beginning of the disease. When confronted with a case we have two things to do; first, to prevent formation and absorption of fresh toxin; second, to control the change which the absorbed toxin has already produced.

There is in every case, at the time we see it, toxin in the body which has been formed by the germs, but which is not yet in combination with the nerve cells. The administration of anti-toxin is our best method of preventing this union. We should therefore, if possible, even before we treat the wound, give anti-toxin both intravenously and subcutaneously in the vicinity of the wound. After a careful study of the experiments

of Meyer and Ransom, Tiberti, Zupnick, and others, I am not convinced that the axis cylinders are the chief means of conveyance of the toxin to the nerve cells, and I do not believe that the injection of the nerve trunks with anti-tetanic serum is of the supreme importance, which has been assigned to it. It should however be tried. The pathogenesis of tetanus is yet to be definitely decided.

In order to prevent the formation of new toxin we have to direct our attention to the wound. We know that it is infected with tetanus. The indication is therefore clear: get rid of this infection by thorough local treatment, if possible, if not, by amputation, but get rid of it. This however in most cases is easier said than done. I think in a large majority of cases which die from tetanus that properly taken cultures would show growing tetanus bacilli. I can illustrate this by a case which came under my observation. The patient, a 14-year-old boy, was injured by the explosion of a firecracker which produced a lacerated wound of the thenar eminence of the left hand. The father, a doctor, appreciating the danger of the wound, gave it prompt and what he considered effective local treatment. Despite this, some days later the boy developed tetanus and was taken to a hospital. The attending surgeon opened the wound under general anesthesia, curetted carefully and gave intravenous and subcutaneous injections of anti-tetanic serum. Despite the serum treatment combined with morphine and chloral and the daily curetting of the wound, the patient died. A short time before death, as a last resort, the arm was amputated. Eight cultures

taken from various places in the wound all showed tetanus bacilli.

Another case has been reported by Dr. T. B. Cooley, of Detroit, which continued to become worse despite curetting and wide opening of the wound. Further examination showed that one-half inch beyond the bottom of the wound in apparently healthy tissue was a small piece of clothing which was producing the tetanus. This was removed and the patient recovered.

The wound, then, should be opened and treated thoroughly, (I cannot make this too strong), even to complete excision going one-half inch into the healthy tissue on all sides. If a finger or toe, it should be amputated. If there are multiple wounds or for any other reason complete disinfection cannot be secured, amputate, for this is the only sure way of securing complete disinfection. And even the value of amputation has been questioned.

Now, having done what was necessary to prevent the absorption and formation of fresh increments of toxin, we must take care of that which has already been absorbed, and is combined with the nerve cells. Here our treatment must be symptomatic for we do not possess any specific which will break up the combination of the toxin with the nerve cells when once established. The body must do this. The chief symptoms to be met are the tonic and clonic muscular contractions. If we can control these we can cure almost every case of tetanus for it is this tremendous muscular contraction which by exhaustion, by increasing the metabolic poisons and decreasing their elimination produces death. For this purpose many drugs have been

used. Chloroform will, of course, control them, but its prolonged use is not well borne. It is very effective to control the occasional very severe convulsions and many patients who die in one of these might be saved by its prompt use. Morphine and chloral have been extensively used and have been effective in many cases. In some, however, they have completely failed. The ideal method would be one by which the hypersensitiveness of the nervous system could be reduced by some means which would not interfere with the elimination of the poisons of the germ from the body. In this way we could prevent the exhaustion of the convulsions and the increased production of the auto-poisons, and at the same time allow the body to overcome the tetanus toxin. The nearest approach thus far to this has been the various methods of intraspinal treatment. Murphy (1904) has reported a case successfully treated by the injection of morphine-eucain solution which controlled the spasms after anti-tetanic serum had failed and more recently Blake has cured a severe case by the injection into the spinal canal of a 25% solution of magnesium sulphate. The convulsions were at once controlled and recovery followed. These results are most encouraging and other less poisonous drugs should be tried, such as chloretone, which can be given by the mouth and is comparatively harmless. I am trying this experimentally on animals, but as yet have arrived at no definite conclusions.

Another method of preventing convulsions which is never to be overlooked, is the elimination of the external stimuli which cause them. The patient should

be kept in a dark room absolutely quiet and as far from all sounds and other disturbances as possible. While this may sound trite, I have seen in one of the great surgical clinics, a patient suffering with tetanus taken from a general ward on the third floor, down the elevator, across an open court and into an amphitheater filled with students where intracerebral injections of anti-toxin were given. Considerable surprise was expressed by the eminent surgeon that the patient died.

Still another method in the treatment of tetanus must be considered. This is the Baccelli treatment, which is believed by its author to be specific and which in his hands has given surprisingly good results. Baccelli reported at the last Italian Medical Congress, of which he was president, 10% mortality. It is only fair to say, however, that the Italians have always secured better results in the treatment of tetanus than any other observers. It would seem that the Italian variety of tetanus is not so virulent

as that found in other countries. This treatment consists in hypodermic administrations of from 2-3 c. cm. of a 2% solution of phenol, every two or three hours, until carbolic acid appears in the urine. The only case of tetanus which I have seen cured, was treated by this method, following amputation.

Still another means at our disposal is very free bleeding followed by the administration of a salt solution. Whether this removes toxin in the circulation or only removes part of the metabolic poisons, it has been proven of great advantage in veterinary practice.

C. S. Oakman, Detroit, had seen many cases of fire-cracker and cartridge injuries, and in one series a uniform procedure was adopted; the wound was thoroughly dissected and all foreign matter removed, one injection of antitoxic serum given, and cultures taken from the wounds. No case of tetanus developed, but an appreciable percentage of the cultures grew tetanus bacilli. Present therapeutics affords no single specific, and we must rely on the "shot-gun" method of using every means. Especially should these cases be regarded as surgical, and prophylactic treatment be the first for all wounds in which tetanus may be suspected.

The change of dressings of burns may be made painless, and the growth of epithelium encouraged, by employing next to the wound sterile strips of gutta-percha in the same manner as for skin-grafts. Subiodide of bismuth lightly dusted on the granulating surface stimulates epitheal growth.

Severe pain in the orbit or even in the eye itself should make one think of frontal sinus infection, especially if there is, or recently has been, a nasal discharge. Marked localized tenderness will soon confirm the suspicion, if the disease exist.

Whenever the arrangement of a patient upon the operating table requires an extremity to occupy a constrained position, that position should be shifted from time to time to avoid pressure paralysis. The anesthetist should never draw the arms alongside the head, nor permit the strap of a leg-holder to press, for more than a few minutes at a time, upon the brachial plexus in the neck.

When it is necessary for the anesthetist to hold the patient's jaw forward, he will obviate much subsequent soreness by exerting the pressure upon only one side at a time.

The Journal of the Michigan State Medical Society

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SEPTEMBER

Editorial

The Present Neglect of Vaccination

can hardly fail to strike anyone who has to do with public health work or who has occasion to examine any large number of children. As a routine procedure it would seem to be much less common than it was a decade or so ago, and it is apparently becoming still less frequent. This observation is brought home with especial force to the physician who has had opportunity to observe any of the recent outbreaks of smallpox, or who takes the trouble to study such statistics as have been compiled from them. Two examples, of the many that might be cited, will serve well to illustrate present conditions. On the occasion of an outbreak of smallpox in one of the smaller cities of this state, in which the standard of intelligence might be supposed to be unusually high, a census of the children in the public schools showed that less than 20 per cent had ever been successfully vaccinated, and this in spite of a previous smallpox scare three years before. One of the great manufacturing firms of the country has found it no longer profitable to make vaccine, and during the present year has suspended its production.

The causes of this condition are not

far to seek. Whatever influences may be ascribed to the anti-vaccination movement in England, or in certain of the eastern states, it certainly plays a very small part with us. The chief factor here is beyond doubt a growing indifference to the importance of general vaccination on the part of the medical profession as well as the laity. The comparative rarity of the severe type of smallpox during the last two decades has induced a false sense of security. The younger generation, for the most part, has never seen the disease in its more dreadful forms, and the older one has well nigh forgotten it. The recent prevalence of a very mild type, scarcely more serious than chicken-pox, seems, moreover, to have given rise in the minds of many to a vague idea that the graver type has disappeared—run out, so to speak—and that there is no longer any real reason for dread. To this general indifference must be added another factor which is too often undervalued, namely, a genuine and more or less well founded dread of vaccination on the part of many who have observed in the case of friends or neighbors, or in the public prints, unpleasant and even serious results to follow it. It is not at all uncommon to hear a man say that he would take his chances of smallpox rather than be vaccinated, and the argument is not always an easy one to meet. The condition that confronts us is really potentially quite serious. We have a large and increasing unvaccinated population which would furnish a most fertile soil for the spread of an epidemic if it should once obtain a foothold, and the severe Boston epidemic of 1902, or the occurrence of a number of hemor-

rhagic cases in Boston a year ago is ample evidence that the mild form has not entirely supplanted the graver one; nor have we yet any good ground for supposing that the milder type is fixed, and may not at any time revert to the other. Conditions are undeniably ripe for very serious trouble in almost every part of the country, and this is the more to be regretted because smallpox is by far the most easily and surely prevented of all the infectious diseases. There is nothing in medicine more certain than that vaccination protects, and no such brilliant results can be shown in any other line of preventive medicine as have followed systematic general vaccination in the countries where it has been carried out. We in America are in a fair way to lose the benefit of what is perhaps the greatest discovery in medical history, and that through nobody's fault but our own.

The remedy lies with practitioners of medicine. State boards and health officers may preach vaccination as much and as earnestly as they please, but the way to overcome the indifference of the public is by the offices of the family physician, who is not doing his whole duty if he does not inform himself as to whether or not the members of the families he visits have been vaccinated, and urge it upon them if they have not. The writer is far from being an advocate of compulsory vaccination in America under present conditions—whether or not it might be wise at some future time in another generation—but he does believe firmly that a more active interest in the subject on the part of the practitioners in general would lead to a vast improvement over present condi-

tions.

With regard to the second factor mentioned—the widespread dread of vaccination—it is unfortunately true that the blame for this lies largely at the door of the profession. It is most surprising to find how many of the laity believe that vaccination has not “taken” properly unless there are ulceration, much swelling, and all the other accompaniments of infection, and still more astonishing to see that these things are looked upon by many physicians as natural and not at all out of the way. It is not to be wondered at that people who are used to seeing such results should dread the operation. The fact is that too many of our profession look upon vaccination as so trivial a thing that it can be done carelessly, with no special attention to surgical cleanliness, and then left to take care of itself. If more physicians made a practice of seeing every patient they vaccinate at the end of six or eight days there probably would be less of this trouble. It is, of course, understood that more or less constitutional reaction normally follows vaccination, especially in the adult, and that rarely a case of generalized vaccinia cannot be avoided; but ulceration, sepsis, vaccination tetanus, and other untoward results can be excused only in case the patient has deliberately disregarded the careful instructions for after care of the arm that should have been given him by the physician. The time has passed when all such happenings could be attributed to the virus used. It is only fair to the profession to say that no one can afford to give the care and attention to vaccination that are required for uniformly good results at the ridiculously

small fees usually charged for the service, and it is time that a change should be made in this regard. It is a minor operation requiring care and good technic and some after attention, and the charge should be in proportion.

It rests with us, then, if we wish to avoid future trouble, to educate the public out of its present indifference to the advantages and necessity of general vaccination, and by an improvement in our methods and a corresponding decrease in unpleasant results to show them that, properly done and properly cared for, the operation is not one in the least to be dreaded. One point is perhaps not so generally understood by the profession as it should be: that is, that the inevitable moderate constitutional reaction is least in infancy, and increases with age, so that the most favorable period for the first vaccination is the first year of life. Revaccination, properly done, is seldom followed by annoying symptoms.



Opsonic Therapy.—Very much in the public eye of the medical world at the present moment is Wright's theory of opsonins and opsonic action. Temporarily at least it has eclipsed the brilliant and ingenious side-chain hypothesis of Ehrlich. This obscuraton is no doubt largely due to the appeal which Wright has made to active medical practitioners by early turning his work to the practical every-day problems of clinical medicine. A larger audience has been reached than by the more distinctly laboratory environment in which Ehrlich's theory has been pursued, and for the time being at least Wright's laboratory in London has be-

come the Mecca for pilgrims in search of the latest gleanings of bacterio-therapeutic lore. And in that laboratory one finds the master busily engaged in testing his products on human beings afflicted with various disorders. In other words, Wright conducts a clinic, and his subjects are men, as well as guinea-pigs, mice, and rabbits. Moreover, unless all accounts are unreliable, he is effecting some astonishing therapeutic results, and it seems safe to predict that a new era in biologic therapy has been inaugurated in which bacterial vaccines, controlled by accurate opsonic measurements, will be employed to combat a number of infectious diseases hitherto beyond the reach of medical skill. At the present moment this list includes disorders arising from infection with the pyogenic staphylococci, streptococci, pneumococci, gonococci, typhoid bacillus, colon bacillus, and the bacillus of tuberculosis. Thus in such staphylococcic infections as chronic furunculosis and acne, pneumococci infections like intractable empyema and arthritis, and tuberculous lesions like lupus, cystitis, pyelonephritis, arthritis, osteitis and phthisis in its early stages, truly astonishing curative effects have already been achieved by Wright and others.



Opsonic Intricacies are, however, encountered in the practical application of Wright's methods. Indeed, without the skill of an expert bacteriologist familiar with ordinary bacteriologic technic and thoroughly competent in the latest methods of serum pathology, the task would be hopeless. One must needs be able to isolate and identify the infecting

organisms in a doubtful case, to determine the "opsonic index" by a process highly refined in the delicacy of its manipulations but most satisfactory in its results, and finally to proceed with theoretic rationality the operator should prepare some, if not all, of his vaccines. Dosage of the vaccine and repetition of dose are determined by the fluctuations in the opsonic index of the patient's blood serum. It is plain that opsonic therapy is to be successfully practiced only by medical men who combine with good clinical acquirements the highly developed expertness of the accomplished laboratory specialist. The relatively few men possessing this happy combination of knowledge and skill will become "opsonic consultants," so to speak, of the general practitioner or the specialist in purely clinical lines.



The one criticism of Dr. McCormack's meetings in other states has been that they were not well advertised and were therefore not attended by as many of the profession and of the laity as should have been the case. Let us not make this mistake in Michigan. We have five weeks in which to make preparations, and we have the experience of other states to guide us. We also have a sufficient sum of money for the detail work, the Council having appropriated two hundred dollars for the purpose. Dr. McCormack's own expenses are paid by the American Medical Association.

Before considering the details of the itinerary, let us have a clear understanding of what Dr. McCormack is doing. He is not, as some suppose, going about

telling the profession "how to be good," he is not "reorganizing," and he is not holding "love feasts" for the doctors alone. He is rather striving to tell the *public* what organized medicine stands for and attempting to uproot the more or less inherited antagonism to the medical profession which is inherent in many communities. He takes up many of the present day evils, such as drug store practice, the social disease evil, the harm resulting from not paying doctors' bills, the patent medicine question, and questions of sanitation. He makes it plain to the public that physicians have no interests which are not as well the interests of every individual in the community.

Judging from the reports received of Dr. McCormack's addresses in other states, there is not a dull moment in any of them. He is a splendid speaker and has that magnetic personality which never fails to charm every listener.

Let it be understood then that the meetings are not "medical meetings," but are for public addresses. It will be to the advantage of every physician to see to it that his patrons—lawyers, bankers, school teachers, merchants, farmers—"the butcher, the baker, et al."—are invited and urged to come.

Everyone who hears the addresses will ever after better understand the motives, the ambitions, the tribulations and the trials of his physician. Dr. McCormack promises to make the day worth any month's practice to every physician, a portion of whose clientele are present.

The proposed itinerary is as follows: Detroit, Monday, October 8th; Ann Arbor, October 9th; Jackson, October 10th,

Lansing, October 11th; Charlotte, October 12th; Battle Creek, October 13th; Kalamazoo, Monday, October 15th; Benton Harbor, October 16th; Holland, October 17th; Grand Rapids, October 18th; Greenville, October 19th; Big Rapids, October 20th; Cadillac, Monday, October 22nd; Traverse City, October 23rd; Marquette, October 24th; Sault Ste. Marie, October 25th; Bay City, October 26th; Saginaw, October 27th; Alma, Monday, October 29th; Flint, October 30th; St. Johns, October 31st; Lapeer, Thursday, November 1st; Port Huron, November 2nd; Adrian, Saturday, November 3rd, thus completing a four weeks' trip.

At this writing not all of the above schedule has been approved by the Council, and it is possible that some of the dates may be changed. We invite suggestions from the members of the Society.

In the larger places it is probable that a meeting of the physicians will be held in the afternoon and a public address given in the evening. The meetings will be held under the auspices of the district societies and of the county societies of the counties which are on the list.

In order that the greatest possible good may be accomplished, an explanatory circular letter will be sent by our president to every doctor in the state. The councilors and county societies will also send invitations. Due notice of the meetings will also be given in the local press.



Dust, Flies and Tuberculosis.—Opportunity to impress upon the laity two important factors in the spread of

tuberculosis and other infections was overlooked by the various lecturers in the excellently presented program of the Detroit Tuberculosis Exhibition. Spitting and sputum were repeatedly dwelt upon, along with the usual instructions concerning fresh air, sunlight and good food. But the grave menace of dust—the dust periodically stirred indoors by imperfect household practices, and the dust of poorly-cared-for city streets—was quite neglected. A lesson on dust and disease could be presented under no better auspices than with the public antituberculosis crusade, and the oversight of Detroit's public officials in this matter would have furnished a glaring example.

In a similar manner the public might have been aroused to the danger of the common fly, that ubiquitous household pest of the summer months which shows a special predilection for a diet of sputum or feces and follows it by a course of beefsteak or a bath in milk, and a promenade with frequent droppings over the dishes in which our food is prepared and served, or a more intimate contact with the surface of our bodies. It would surely have been profitable had it been pointed out that the tendency of recent investigation is to ascribe to the housefly a very important role in the transmission of tuberculosis, to say nothing of its deadly activities in other directions.

Local anesthetics cannot be injected painlessly into tense, inflamed areas unless the injection is begun at a point in the skin well beyond the seat of inflammation.

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Book Notices

Walter Reed and Yellow Fever.—By H. A. Kelly, M. D., Professor of Gynecological Surgery, Johns Hopkins University. Cloth; 5½x7½ in., 293 pages, illustrated. Price \$1.50 net. New York, McClure, Phillips & Co., 1906.

A notable addition both to the history of medicine and to medical biography is this book by Doctor Kelly. To Walter Reed, the world owes the greatest medical discovery since that of anesthesia, but the public has been slow indeed to appreciate the true value of the discovery and backward in paying tribute to the discoverer. This is due to the ignorance of the people. Dr. Kelly says, "It is partly with the hope of aiding in the dissemination of the necessary knowledge that this little book is sent forth into the world, for I cannot but believe that if my countrymen only understand the subject in all its bearings, they will find some substantial means of testifying their gratitude to the man whose memory each and all of us should delight to honor."

The work of Reed in establishing the manner of inoculation of yellow fever and the means of preventing the spread of that pestilence, is well known to every medical man. With the story of his life, however, few are familiar. Doctor Kelly has told this picturesque story in such realistic words that one's attention is held from the first to the last chapter.

Walter Reed was born in Virginia in 1851. After taking his degree in medicine at the University of Virginia, he gained his clinical education in several hospitals in New York and Brooklyn. He practiced for five years, but having entered the profession some four years earlier than most men, he found success slow in coming. In one of his letters, Reed says: "It is a remarkable fact that a man's success during the first decade depends more upon his beard than his brains. * * * Yet notwithstanding these many drawbacks, my success has been greater than I expected." Nevertheless, he resolved to enter the medical service of the army and in June, 1875, after passing a brilliant examination, he was commissioned as Assistant Surgeon.

The account of Dr. Reed's life on the frontier (1876-1891) as related by the author, is very interesting. In 1890, Dr. Reed was sent to Baltimore. The Pathological Department of the Johns Hopkins Hospital had been opened the previous year and while in Baltimore, Reed came under the magnetic influence of Professor William Welch—than whom no American has inspired more students. It was here that Dr. Reed gained the

scientific knowledge on which was afterwards based his research work.

After a short service in Dakota, Doctor Reed was stationed at Washington and made curator of the Army Museum. He was chairman of the committee appointed to investigate the epidemic of typhoid which broke out among the troops during the Spanish-American War. The other members were Dr. Vaughan, of Ann Arbor, and Dr. E. O. Shakespeare, of Philadelphia.

In 1891 the work on yellow fever began. Dr. Kelly gives a valuable review of the history of yellow fever and the work which had been done up to the time of the appointment of the commission. The officers composing the board were: Dr. Walter Reed, Dr. James Carroll, and Dr. Jesse W. Lazear, all non-immunes, and Dr. Aristides Agramonte, a Cuban immune.

The story of the mosquito work at the camp in Cuba, of the severe illness of Dr. Carroll and the sad death of Dr. Lazear are well told.

Dr. Reed died November 22, 1902, on the sixth day after an operation for appendicitis.

The happy style which has always made Dr. Kelly's scientific writings delightful lends itself well to a subject such as this. The book is more interesting than a novel and should be read and recommended by every physician.

International Clinics. Vol. II, Sixteenth Series, 1906. Cloth, 6½x9½ in., 302 pages, profusely illustrated. Price \$2.00. Philadelphia, J. B. Lippincott Co., 1906.

This well known publication has steadily improved both as to the quality of the papers and the mechanical work. The present volume contains 25 original articles by well known authorities. Twenty-eight plates, two being colored, and eighteen figures elucidate the text. The book is well worth the price.

A Compend of Materia Medica, Therapeutics and Prescription Writing.—By S. O. L. Potter, M. D., M. R. C. P. Cloth, 5x7 in., 291 pages. Price \$1.00. Philadelphia, P. Blakiston's Son & Co., 1906.

A compend on materia medica is more useful than one on any other subject, for one may find a forgotten point in a moment—and materia medica is made up of a huge conglomeration of forgotten points—at least so most of us feel.

This edition of the "little brown Potter" familiar to every medical student, has been brought up to date and contains a more hopeless array of facts than ever before. It is a good little desk book.

The Eye and the Nervous System, Their Diagnostic Relations—By Various Authors. Edited by Wm. Campbell Posey, Professor of Ophthalmology at the Philadelphia Polyclinic, and Wm. G. Spiller, Professor of Neuro-Patnology at the University of Pennsylvania. Octavo. 800 pages. Thoroughly illustrated. Cloth, \$6.00. With 22 chapters by the leading specialists of the United States. Philadelphia, J. B. Lippincott Co., 1906.

Ocular phenomena constitute phases of so many disease-conditions that this subject must have interest for others than the oculist and neurologist though doubtless for these the chapters here written by a group of authors eminent in these specialties will have particular significance. The editors, Drs. Wm. Campbell Posey and Wm. G. Spiller, well comment upon the necessity to the ophthalmologist of a certain knowledge of neurology and the great service to the neurologist of at least an acquaintance with ophthalmology; but there is a large number from the rank and file of scholarly and thoughtful physicians to whom this book will appeal as of special interest.

As is almost inevitable, the chapters written by the oculist bear the unmistakable stamp of the dicta of him in whose mental vision the eye looms large above all else, while in those chapters upon the various diseases of the nervous system, facts pertaining to the neuron are written larger and clearer than those treating directly of ocular connection or phenomena, e. g., one may read here much of bulbar and pseudo-bulbar diseases, with only the barest mention of ocular involvement, and in other chapters by the neurological collaborators much is written which we commonly find in textbooks upon the diseases of the nervous system and comparatively little upon ocular manifestations. If any criticism were to be offered, it would be this, that much is here written which is hardly necessary to even a clear discussion of the connection of the eye and nervous system and which therefore makes a book upon this special subject seem somewhat padded here and there.

Still the collaborators are able men who have given us between the covers of this book much that is of value and interest to the ophthalmologist, the neurologist and to the general practitioner who seeks to keep himself broadly informed.

The publisher's work is admirably done. Paper is good, print is clear and binding is most attractive.

Human Sexuality, A Medico-Literary Treatise on the Laws Anomalies, and Relations of Sex.—By J. Richardson Parks, M. D., late Acting Assistant Surgeon, U. S. A. Octavo, 476 pages, cloth. Price \$3.00. Philadelphia, Professional Publishing Co., 1906.

This work covers much the same ground as the various volumes of Havelock Ellis, but much that renders the latter books tedious has been omitted. Chapters are devoted to a consideration of the moral and social aspects of the sexual relation, sexual selection, betrothal, marriage and divorce, abortion and infanticide, the laws of sexual desire, inversion and perversion, artificial erotism, etc. These topics have been handled in a scientific manner and with a delicacy which has been lacking in similar books along the same line.

Every physician should have a certain amount of knowledge of the psychology of the sexual instinct and this book is apparently a reliable source of information on the subject. For this reason we recommend it. The book is well printed.

Books Received.

Golden Rules of Surgery. Aphorisms, Observations and Reflections on the Science and Art of Surgery. By Augustus Charles Bernays, A. M., M. D., St. Louis, The C. V. Mosby Medical Book Co., 1906.

Walter Reed and Yellow Fever. By H. A. Kelly, M. D. New York, McClure, Phillips & Co., 1906.

International Clinics. Vol II., 16th Series. Philadelphia, J. B. Lippincott Co., 1906.

Compend of Materia Medica, Therapeutics and Prescription Writing. By S. O. L. Potter, M. D. Philadelphia, P. Blakiston's Son & Co., 1906.

The Eye and the Nervous System, Their Diagnostic Relations. Edited by W. G. Posey, M. D., and W. G. Spiller, M. D. Philadelphia, J. B. Lippincott Co., 1906.

Transactions of the Utah State Medical Association. Published by the Association, 1906.

Non-Surgical Treatise on the Diseases of the Prostate Gland and Adnexa. By George Whitfield Overall, A. B., M. D. Rowe Publishing Co.

Clinical Bacteriology and Hematology for Practitioners. By W. D. Emery, M. D., B. Sc. Philadelphia, P. Blakiston's Son & Co., 1906. (Review next month.)

Prophylaxis and Treatment of Internal Diseases. By Frederick Forscheimer, M. D. New York, D. Appleton & Co., 1906. (Review next month.)

County Society News.

Genesee.

The Genesee County Medical Society held its regular quarterly meeting at the Oak Grove Hospital, in Flint, on July 25th, and the afternoon was devoted to a clinic by Dr. George Dock, of Ann Arbor. He demonstrated the various methods of Physical Examination and discussed their value. It was one of the most successful meetings we have held in point of attendance and interest.

J. G. R. MANWARING, Sec'y.

Grand Traverse.

Since the death of the former president of the Grand Traverse County Society, the officers are: President, I. A. Thompson; vice president, J. B. Martin; board of censors, F. Holdsworth, W. E. Moon and William Shilliday.

J. W. GAUNTLETT, Sec'y.

Schoolcraft.

At the last meeting of the Schoolcraft County Society the following resolutions were unanimously passed:

Whereas, The office of medical examiner for life insurance requires a high degree of professional skill, absolute integrity and special care looking to the interests of both applicant for insurance and insurance company, and

Whereas, Certain of the old line life insurance companies have recently announced their intention of reducing the fee usually allowed to physicians acting as their medical examiners, and

Whereas, After due deliberation we find that a fee of less than five dollars (\$5.00) is not commensurate with the amount of work and care involved;

Therefore, resolved, (1) That we, the members of the Schoolcraft County Medical Society, on and after August 1, 1906, refuse to make any further examinations for all so-called "old line" life insurance companies for less than the regular fee of five dollars (\$5.00).

(2) That a copy of these resolutions be sent to the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY, the *Journal of the American Medical Association* and a copy to each of the old line life

insurance companies doing business in this country.

G. M. LIVINGSTONE, Sec'y.

St. Joseph

St. Joseph County Medical Society met at White Pigeon, Tuesday, July 17th. The meeting was held in the parlors of the Alba-Columbia Club. President Cameron was in the chair. The minutes of the previous meeting were read and approved.

Dr. Blanch Moore Haines gave an interesting account of the State Meeting.

Dr. F. W. Robinson presented the history of a case of Abscess of the Hip, under his treatment, which was discussed by Drs. S. R. Robinson, F. W. Robinson, Haines, Flanders and the President. A general discussion on peritonitis followed, and the Society adjourned to meet at Constantine in September.

The attendance at our meetings has not been what it should be, but the White Pigeon meeting has "renewed the hope that is within us."

JOHN R. WILLIAMS, Sec'y

Tri County.

The regular meeting of the Tri County Medical Society was held in its rooms in Cadillac, on Friday evening, July 7th.

Dr. Louis Barth, of Grand Rapids, met with the society and after examining two patients that had been brought before the society, discussed Hodgkins disease, one of the cases having been pronounced to be such.

Dr. Barth brought with him from Grand Rapids, a man with a complete transposition of the organs of the chest and abdomen, as was clearly demonstrated. This was a very interesting subject as many had never before seen such a case.

Dr. Barth, who is a great traveler, brought with him many relics of the medicine men of the Indians, gathered in his travels through Arizona and New Mexico, and gave a very interesting talk on their habits and methods of using these various implements.

At the close of the meeting, a lunch was brought to the rooms and was well cared for by those present.

The next meeting will be held at Kalkaska.

W. B. WALLACE, Sec'y and Treas.

WAYNE.

The officers of the Wayne County Society for 1906-7 are: President, J. Henry Carstens; vice president, W. F. Metcalf; secretary, Walter D. Ford.

The following letter has been sent to the members:

Dear Doctor:—When the meetings of the Society are resumed in September it will be the desire and effort of the officers to make the work of the year as instructive and profitable as possible.

It seems to your Program Committee that some systematic plan for the Society's meetings of the coming year would be desirable. In this way variety can be secured to an extent greater than if no plan for the year were made at the start. It is obvious, however, that such a plan should be kept flexible enough to provide for unforeseen needs and opportunities.

Your committee hopes to present a number of the papers in series, taking up such subjects as

Diseases of Respiratory System,

Diseases of Circulatory System.

Syphilis,

Tuberculosis,

Acute Infections,

Those having Gynecological or Obstetrical Significance.

Newer phases of Surgical work.

The first, third and fifth meetings of each month, according to the by-laws of the Society, are general meetings; the second meeting, medical; the fourth, surgical. It is planned to devote the third meeting of each month to some subject or subjects of general interest closely related to medicine, as a biographical sketch, or an account of medical matters in some other part of the world.

The above plan is, of course, open to change, and your suggestions for the improvement of it are solicited. Your committee hopes, however, that the plan may appeal to the members as an organized basis for making their contributions to the meetings of the Society. Please fill out enclosed postal as far as possible with reference to the proposed plan and return same.

The September program is already filled. Since the time is short before the year's work shall begin, it is very essential that the enclosed card be filled out and returned to the Program Committee without delay. If you will not read a paper, signify a choice of subject that you would be willing to discuss.

In short, identify yourself with the active work of the Society.

PROGRAM COMMITTEE:

H. WELLINGTON YATES, Chairman,

1360 Fort St. West.

WILLIAM E. BLODGETT, Sec'y of Surg. Sect.,
312 Washington Arcade.

WALTER J. WILSON, JR., Sec'y Med. Sect.,
216 Theodore St.

Michigan Personals

Dr. George M. Kline, of Ann Arbor, and Miss Ethel Fry, of Grand Rapids, were married on June 23.

Dr. George Dock, of Ann Arbor, was elected president of the American Association of Medical Librarians at a recent meeting in Boston.

At the annual meeting of the Alumni Association of the Jefferson Medical College, Dr. James H. Reed, of Battle Creek, was elected vice-president for Michigan. Dr. Reed is very anxious to hear from all Jefferson graduates in Michigan, as active steps are to be taken to bring about a reunion in all the states, territories and possessions of the United States.

Dr. Carl G. Zeidler, of Belleville, and Miss Harriet Fletcher, of Chelsea, were married July 5.

Dr. R. L. Clark, of Detroit, and Miss Prudence Chapman, of Walled Lake, were married July 11.

Dr. W. S. Mackenzie, of Munising, and Miss Warren, of Chicago, were married June 27.

Dr. C. B. Toms, of Big Bay, and Miss Cordelia La Rue, of Republic, were married June 27, at Marquette.

Dr. and Mrs. E. T. Tappey, of Detroit, are in Europe.

Dr. D. C. Howell, of Onaway; Dr. N. C. Monroe, of Millersburg; Dr. M. H. Nester, of Metz, and Dr. W. W. Ascot, of Rogers, have been appointed County Physicians of Presque Isle County.

Dr. R. C. Macgregor, of Saginaw, sailed for Europe on June 30. He will return early in September.

Dr. and Mrs. E. J. Marshall, of Marshall, have gone abroad for four months.

Dr. Earl M. McCoy and Miss Lulu Marion Smith were married in Grand Raids, July 6.

Dr. W. H. Lester, of Greenville, and Miss Effie Carroll were married, June 23, at Detroit.

Dr. John F. Hinks, U. of M., 1906, has been appointed house physician at the Jackson City Hospital.

Dr. T. P. Hanna has removed from Detroit to Romulus.

Dr. C. A. Crane, of Tawas City, and Miss Catharine Johnston, of Portsmouth, Ohio, were recently married at Portsmouth.

Dr. Stanley O. Newcomb and Miss Julia Snell, both of Ida, were married June 28.

Dr. L. R. Cobb and Miss Carrie Moon, both of Belleville, were married June 18.

Dr. J. B. Griswold, of Grand Rapids, has been elected commander of the Michigan G. A. R.

Dr. F. J. McDaniels, recently on the resident staff of Harper Hospital, has located in Alpena.

Dr. T. S. Conover, of Flint, and Dr. W. J. Conover, of Evart, are in Europe.

Dr. R. L. Kennedy, of Detroit, has been appointed Superintendent of the State Tuberculosis Sanitarium which, it is expected, will be ready for patients about January of the new year. Dr. Kennedy was graduated from the Detroit College of Medicine in 1898.

Dr. C. A. Wilbur, formerly of the State Health Department, has been appointed chief statistician for the division of vital statistics in the U. S. census bureau.

Dr. Glen W. Stockwell, of Detroit, and Miss Elizabeth Heron, of Toledo, were married June 18th.

Dr. W. H. Ditmars and Miss Anna Green, both of Jonesville, were married June 10.

Dr. Stripp and Dr. Carey, of the Michigan insane asylum, have resigned. Dr. Carey has accepted a professorship in a college in California and will leave on September 1. Dr. Stripp will practice somewhere in Michigan.

Dr. Elizabeth Morse, recently a member of the asylum staff at Pontiac, has resigned to accept an hospital position in Boston.

Dr. Walter den Blyker, Secretary of the Kalamazoo Academy of Medicine, and Miss Julia Marion Brownell, daughter of Mr. and Mrs. A. W. Brownell, of Kalamazoo, were married June 26th.

Dr. H. E. Rea and Miss Nellie Longwell, of West Branch, were married June 24.

Dr. Otto Scherer has been re-elected President of the Wayne County Superintendents of the Poor.

Dr. and Mrs. V. C. Vaughan are in Europe.

Dr. C. W. Yarrington, of Calumet, and Miss Bessie Kratz were married June 30.

At the recent meeting of the American Medico-Psychological Association, held in Boston, Dr. C. B. Burr, of Flint, the retiring president of the association, was elected to represent the society on the executive committee of the American Congress of Physicians and Surgeons, which holds its triennial meeting in Washington next year.

The subject of Dr. Burr's presidential address was "The Physician as a Character in Fiction."

Deaths

Dr. O. T. Dales, of Grand Rapids, June 12.

Dr. J. B. Hoskin, of Grand Rapids, July 10.

Dr. Paul Sue, of Fenton, June 2.

Dr. J. E. Conlan, of Munith, June 30.

Dr. C. G. Towar, of Detroit, July 2.

Dr. W. G. Hare, of Bay City, June 19.

Dr. A. H. Holliday, president of the Grand Traverse Medical Society, died July 6. At a special meeting of the society, held July 6, appropriate resolutions were adopted.

Dr. George Chapman, for more than 40 years a resident and once mayor of Hudson, died July 29, aged 80.

Dr. James Clarke, of Bay City, died July 27, from cerebral hemorrhage.

Dr. G. H. Macpherson, of Fowler, died June 8, after a short illness.

Dr. Charles W. Isaminger, an enthusiastic member of the Alpena County Medical Society, died August 4, of cerebral hemorrhage.

Correspondence.

Albion, Mich., August 20, 1906.

Editor of the JOURNAL:

Some time ago the JOURNAL contained a communication by Dr. Powers, of Battle Creek, telling of the work which is being done by the physicians in Calhoun County in exterminating the quacks. We are still after them; since the communication we have not been inactive, and several of the ilk have been driven from the county. We would like to hear that every county in the state had taken up this work, with the good laws we have now there is no reason why we should continue to let so many of these unprincipled swindlers prey upon the people.

Calhoun County Society has a committee with a member in each town who watch for all quacks and either warn them to get out or sign a complaint against them. The Society has incorporated itself and stands behind the action of the committee. What other Society shall we hear from first?

We want now information of one W. Thompson, whom we have a warrant out for. He sells remedies from a wagon, principally "Egyptian Oilio" (which is colored gasoline). He is of medium height, weight, etc., dark complexion, carries a company of four comedians and gives street entertainments. He is a very smooth talker. Last heard of in Windsor, Ont.

If any one can send information of him we will do the rest.

Yours fraternally,

GEORGE C. HAFFORD.

Progress of Medical Science

MEDICINE.

Conducted by

T. B. COOLEY, M. D.

Stasis of Microscopic Particles as a Sign of Cancer of the Lesser Curvature.—ZIEGLER has investigated the gastric contents in a number of cases of cancer of the lesser curvature, and compared the results with those obtained in other diseases which it is necessary to distinguish from cancer, such as subacidity, with and without gastritis, ulcer, etc. He finds that in cases of carcinoma, often long before any gross signs of stasis or any of the ordinary symptoms (hemorrhage, cachexia, glands, etc.) appear, there is always to be observed a stasis of microscopic food particles, starch, muscle fibers, and fat drops, often with clump of leucocytes, and invariably with Oppler's bacilli. This condition is present not only a few hours after the test meal, but the day after the food is ingested, and the bacilli are found after repeated washing of the stomach. This "microscopic stasis" is to be distinguished qualitatively as well as quantitatively from the macroscopic form, of which it is often not a forerunner. It is not found in any of the other diseases which need to be distinguished from early carcinoma, but appears when an ulcer undergoes carcinomatous change.

ZIEGLER's method of examination is to take some of the small particles of mucus which remain in the end of the stomach tube on withdrawal. These are similar in appearance to those found in normal or slightly catarrhal stomachs, and macroscopically show no food particles. Under the microscope, however, they show muscle fiber and fat, and with staining, starch granules and Oppler's bacilli—occasionally leucocytes. The bacilli are the most important, and are never absent, whatever the grade of acidity may be. The others may be absent at times, but all are sure to be found coincidently on repeated examination.

ZIEGLER has been able to diagnose carcinoma of the lesser curvature in this way long before the appearance of any other positive signs, and believes the method to be of great value.—*Zeitschrift. f. klin. Med.*, Vol. 58, p. 499.

The Blood in Children with Adenoid Vegetations.—SCHEIER investigated this subject in 21 children who showed distinct symptoms (interference with nasal respiration or deafness) resulting from this condition. To appreciate his results it is necessary to state first the normal differences of the child's blood from that of the adult. The hemoglobin in childhood averages about 80% against 91.5% in adult life. The red corpuscles are about the same. The greatest difference is in the leucocytes. The neutrophile count is low in childhood, increasing gradually from about 22%

in the first six months to 63% at fifteen years. Small lymphocytes decrease from 65% to 28%, large lymphocytes from 9% to 5.1% in the same time, while eosinophiles do not vary much, averaging about 3.3%. The absolute number of leucocytes averages about 8,600 in children from 9 to 15 years, as against 7,680 for adults. In the 21 children examined the hemoglobin was invariably diminished, averaging 66.2%. The number of red corpuscles was not diminished. The absolute number of leucocytes was greatly increased, the greatest number being 23,000 and the average between 14,000 and 17,000. On differential count there was found in nearly every case a relative decrease in neutrophiles, and an increase of both large and small leucocytes. The eosinophiles showed no change. SCHEIER characterizes this blood condition as a mild grade of chlorosis with leucocytosis, especially lymphatic. All but four of the patients were examined also at intervals after operation. The hemoglobin percentage rose rapidly to near the normal, while the absolute number of leucocytes diminished even more rapidly, returning to practically normal in all but two. The relative proportions of the leucocytes also showed a rapid change toward the normal. It was noted that the children operated upon before being taken to a "summer colony" got much more benefit from their stay there than those whose adenoids had not been removed before their going.—*Zeitsche. für. klin. Med.*, Vol. 58, p. 336.

The Diagnostic Value of Tuberculin in Infancy and Childhood.—BINSWANGER calls attention to the much greater value of diagnostic tuberculin injections in childhood, and especially in infancy, than in adult life. There are two prominent reasons for this difference: First, "latent" tuberculosis practically does not occur in infancy, while in adult life a considerable proportion of the cases that react to tuberculin belongs to this class, and, second: the clinical course of tuberculosis is very different at the two ages. The tuberculous adult is one of a great majority, and his tuberculosis may be of any one of a number of kinds and of degrees of severity, while the tuberculous infant belong to a small, and always much endangered minority.

BINSWANGER analyzes in detail a large number of cases at the Dresden Infants' Home, showing that the injections are almost absolutely reliable. The average dose was 1 mg., though in special cases it was varied to from 1/10 to 5 or 10 milligrams.—*Arch. für. Kinderheilkunde*, Vol. 43, p. 110.

SURGERY.

Conducted by

MAX BALLIN, M. D.

Bacteriologic Investigations on Sterility of Operative Wounds.—DOEDERLEIN has made bacteriologic examinations of the wounds during the course of 100 laparotomies. These investigations showed that it is impossible to keep the incision of the abdominal wall and the abdominal cavity, absolutely sterile, during the course of an operation—with the usual means adopted to prevent infection. The incised skin is the main source of infection, germs being freed from the deeper layers during the operation. To prevent this freeing of germs from the deeper cutaneous layers and the cutaneous glands, DOEDERLEIN prepares the skin as follows: The skin is shaved and washed with soap and water as usual. Then the whole region around the field of operation is rubbed with a solution of formaline in benzine or iodine in benzine (1:1000) and after this brushed with tincture of iodine to harden the skin. Over the iodine a sterilized solution of rubber in benzine (sold in Germany under the name of "gaudanin") is applied to the whole field of operation, and allowed to dry. Dusting the rubber coat with sterilized talcum will prevent it from being sticky. The thin rubber coat prevents the escape of germs from the skin during the operation. Numerous culture-tests have shown that incisions in skin prepared in this way are, and almost always stay sterile during the operation. The coat of rubber is afterwards easily removed with benzine.—*Transactions of the 35th Congress of the German Surgical Society*—Berlin, 1906—*Zentralblatt für Chirurgie*, 1906, No. 28.

Prophylaxis and Treatment of Tetanus.—Tetanus serum is only prophylactic and not of curative value. The preventive injections of serum, in cases of suspicious wounds, should be repeated after 10-14 days have elapsed, as the serum sometimes only delays and lessens the outbreak of tetanus, as the following report of a case will show: A workingman had his foot caught and badly lacerated in a machine. Prophylactic injection of tetanus serum was given 1 hour after the accident. Two weeks later he had spasms in the injured leg—general trismus and opisthotonus after three weeks ("ascending tetanus"). Death 39 days after the accident.—*C. Poehlammer-Griefswald. Ibid.*

Spinal Anaesthesia After Injection of Scopolamin in Laparotomies.—Spinal anesthesia alone has not proved to be very effectual in coeliotomies,

on account of discomfort caused by posture (Trendelenburg position) excitement of and disturbance by the patient, etc. KROENIG uses small doses of scopolamin-morphine to first get the patient in half-sleep. This proved sufficient in confinements; after delivery, the patient does not remember having had pain.

In operations the scopolamin-morphin sleep is supplemented by a spinal injection of stovain or cocain as follows: Two hours before the operation .0003 scopolanim (1/200 gr.)+.01 morphin (1/6 gr.) is given hypodermically; the injection is repeated after an hour. If the patient remembers things clearly after another hour, scopolamin alone .00015 (1/400 gr.) is injected. KROENIG never uses more than .0009 (3/200 gr.) of scopolamin and no more than .02 (1/3 gr.) of morphin.

All impressions on the mind of the patient are kept away, the eyes being covered by dark glasses and the ears being stuffed with cotton and covered with rubber plates. For spinal injection KROENIG uses stovain .008-.012 (1-1/3 gr. to 2 gr.). Most of the patients treated in this way slept quietly during the whole operation.

The main value of the method seems to show itself in the post-operative period. Of 160 patients (all women) operated under this anesthesia, 154 were free from nausea and vomiting. Fluids were given by mouth usually, a few hours after the operation. Post-operative bronchitis never occurred. Convalescence was remarkably quick. Headache was observed 12 times in these 160 cases. The operations included hysterectomies, vaginal and abdominal, operations on stomach and intestines, etc.—Kroenig—Freiburg i. Br., *Ibid.*

Splenectomy for Banti's Disease.—Banti's disease is characterized by tumor of the spleen, sclerotic changes in the lienal vein, certain kinds of anaemia, ascites and cirrhosis of the liver. The swelling of the spleen is the first symptom and preceeding the changes in the liver and the ascites. JAFFE has operated a case of Banti's disease, in the last stage, with immense ascites. Excision of the spleen improved the patient wonderfully, perhaps cured him, in spite of atrophic cirrhosis of the liver existing, as could be seen during the operation. JAFFE believes from this result that in certain cases of atrophic cirrhosis of the liver, splenectomy may be preferable to omentofixation (Talma's operation).—Jaffe—Posen—*Ibid.*

GYNECOLOGY AND OBSTETRICS.

Conducted by

REUBEN PETERSON, M. D.

Concerning Menstruation.—OLIVER, of London, says, that despite the work which has been done on the subject, our knowledge of the mechanism of menstruation is still very meagre. We are entirely ignorant of its evolution and the study of the minute anatomy of the uterus is of little value because the relationships of structure and function are not always apparent.

Vicarious menstruation may be possible, but it is a very doubtful phenomenon. Because of epistaxis, hematemeses, etc., we must not assume that an important function of the uterus has been usurped by some other organ.

OLIVER discusses the marvelous regularity of menstruation, marvelous, because of the many disturbing circumstances incident to modern life.

The views of Heape, who holds that menstruation is a shedding of the mucosa, are considered at some length and controverted by OLIVER, who brings forth the following arguments against the theory.

(1) Menstruation often begins when the individual is asleep, yet the amount of blood then lost is not materially different from that when the same individual is walking about, a fact somewhat incomprehensible if the discharge is the outpouring of the contents of ruptured vessels.

(2) Female acrobats, engaged actively in their pursuits, lose neither more nor less than other women.

(3) In some cases, as in imperforate hymen, the discharge accumulates, even when there is considerable pressure. Such accumulation is compatible with a theory of secretion, for secretory pressure is a powerful force, but it is practically incompatible with the theory of capillary rupture. Stretched in this manner and bathed in this fluid, one can not believe that the epithelial lining could, month after month, undergo wholesale denudation and regeneration.

(4) Curettage of the uterus generally influences the course of menstruation but little. This would not be the case were the epithelium destroyed and regenerated every month.

(5) The mucosa is a highly resilient structure; if, however, it were periodically shed, its restraining influence would be so lessened that submucous fibroids would make their way to the cavity of the uterus more rapidly and more commonly than is their wont. Evolution of these new growths is not thus effected, but results from a

gradual necrosis of the mucosa immediately overlying them, induced by vital pressure.

(6) Worry has a marked effect on the function. If the denudation theory is maintained, then these moods of the uterus are inexplicable. If, however, the menstrual fluid is a secretion, then the behavior of the uterus under these circumstances is intelligible.

(7) Menstruation immediately after ablation of the ovaries can better be explained as a nerve than as a vascular influence.

(8) In membranous dysmenorrhea the membrane may be cast off between periods. Therefore, the very occasional exfoliation in conjunction with menstruation is of little or no value as evidence corroborative of the denudation theory.—*N. Y. Med. Jour.*, Aug. 11, 1906.

Syncytioma Malignum.—HEWETSON relates a case of this disease and brings out some important clinical lessons from it. A patient began to have daily uterine hemorrhages in December, and was allowed to go until March when a curettment was done and the scrapings not saved. In May the uterus was found perforated and a broad ligament hematoma was opened. The tumor was allowed to grow in the broad ligament until finally (August) the author decided to operate. Inoperable chorioepithelioma was discovered. Autopsy on twentieth day, revealed secondary deposits in both lungs.

Judging from the published account, the case was very badly managed from beginning to end. This is admitted by the author who draws the following lessons from the case:

1. Metrorrhagia, following abortion or labor, should call for more prompt investigation, especially in women under thirty.

2. Dilatation and curetting, in such circumstances, is an operation of considerable responsibility, in view of the possibility of malignant disease.

3. Sharp curettes are contraindicated in the parturient uterus, and where septic infections exist.

4. All such curettings should be submitted to an expert pathologist for microscopical examination.

5. Continued metrorrhagia, after such treatment, should be regarded as of serious import, and should call for fresh investigation and prompt radical measures.—*The Practitioner*, August, 1906.

PATHOLOGY AND BACTERIOLOGY

Conducted by

A. P. OHLMACHER, M. D.

Spinal Extradural Inflammation in Cerebrospinal Meningitis.—R. PETERS invites attention to a condition which he has already described and for the discovery of which he claims priority. Extradural inflammation is the peculiar lesion, sometimes advanced to the stage of purulent pachymeningitis externa, again only recognizable through a hyperemia or edema of the extradural and perispinal tissues or even invisible except on microscopic examination. Evidence of subdural infection (leptomeningitis) may be present in various stages, or entirely absent. Examples of the latter class probably represent the anomalous cases in which striking spinal symptoms (rigidity and flexures of the spine and contractions of the limbs—the latter usually less extensive than in spinal leptomeningitis) have been noted with little or no anatomical evidence of leptomeningitis. In the reporter's thirteen cases the pneumococcus, alone or mixed (staphylococcus and streptococcus) was identified in ten, and the meningococcus in three. He believes that the spinal meninges are primarily affected, not secondarily from the cerebral sac; and that the infection is hematogenous in origin.—*Deut. med. Wochenschr.*, Nr. 29, 19 Juli, 1906.

The Elastic Tissue of the Normal and Diseased Heart and Its Significance for the Diastole.—With material composed of a large series of normal and pathologic hearts from individuals of varying ages, studied from the histological standpoint, FAHR finds that the muscle fibers perform the necessary functions of elasticity to the end of the first year of life. With increasing age and consequent demand upon the heart its muscular system alone cannot meet the demands for elasticity of the cardiac walls and elastic tissue makes its appearance arranged as a diffuse network around the muscle fibrils. When abnormal labor is thrown upon the heart by long-standing disease, as for instance, arteriosclerosis, the elastic tissue undergoes a compensatory increase especially pronounced in the muscle bundle beneath the aortic semilunar valves. Krehl's hypothesis of the particular function of the elastic tissue, the regaining of the diastolic attitude after the change in form characterizing the systole, is supported. This is especially the function of the elastic plates which traverse the muscle underlying the semilunar valves.—*Virchow's Archiv.*, Bd. 185, Heft 1, 1906.

The Effect of the Streptococcus and Its Lysin When Introduced Per Os.—The present study succeeds one of the same purpose in which the typhoid bacillus was employed by the author, TCHITCHKINE, and concerns the streptococcus. The administration of small doses of living streptococci per os into rabbits produces streptococcus septicemia and death in about half the cases. The same organisms in like dose introduced directly in the stomach of rabbits diminish by one-half the mortality as observed above. Cultures heated one hour at 45 deg. C. do not alter the result, but those heated to 50 deg. or 55 deg. are relatively less virulent and at 60 deg. become innocuous. In general, if not invariably, infection takes place in the first parts of the digestive tract (mouth, pharynx or esophagus) and probably by penetration through microscopic lesions of the mucous membrane. The intact mucosa of the intestine is an effectual barrier against streptococcic penetration, and infection through the bowel can only be presupposed on the basis of accidental lesion. Streptococcic hemolysin is inoffensive for rabbits when administered by the mouth, but the red corpuscles of rabbits which have ingested streptococci are somewhat more resistant to the hemolysin than those of the untreated rabbit. No active immunity against the streptococcus can be produced by feeding rabbits for sufficient periods with heated and unheated streptococcus cultures.—*Annales de l'Institut Pasteur*, Tome xx, No. 6, 1906.

Unfavorable Results With an Antistreptococcic Serum.—ZANGEMEISTER wished to satisfy himself as to the value of Aronson's antistreptococcic serum which he tested both by animal experimentation and clinically. The serum fulfilled the maker's claims so far as its protective value in rabbits was concerned. But when employed as a prophylactic preceding abdominal operations in which there was reason to fear infection, the serum apparently was valueless. Thus in a series of 17 total abdominal hysterectomies mostly for extensive carcinoma 6 patients died in the post-operative period with septic peritonitis of varying extent, and streptococci were isolated from the infected wound or peritoneum in 5 of these. A protective dose of 20 or 30 c. cm. of Aronson's serum was administered at the time of operation. Zangemeister concludes that in its present form Aronson's antistreptococcic serum is useless as a therapeutic agent in man.—*Deut. med. Wochenschr.*, Jahrg. 32, Nr. 27, 1906.

PHARMACOLOGY AND THERAPEUTICS

Conducted by

A. H. ROTH, M. D.

The Action of Quinine Upon the Malarial Plasmodium.—(Conclusions):

1. Quinine exercises an injurious effect upon the plasmodia of malaria during all stages of their human life-cycle, whether intracorporeal or extracorporeal, except when it is administered just prior to sporulation, at which time the sporulating body is not injured and sporulation occurs, but most of the spores are destroyed by the drug while they are free in the blood plasma.

2. The marked morphologic changes, degenerative in character, produced by quinine in all species of the malarial plasmodia, during all stages of their growth, prove that in order to secure the best therapeutic results, the drug should be continually present in the blood, and this is only possible when it is administered in divided doses at irregular intervals of time.—CRAIG, *American Medicine*, May, 1906.

The Drug Treatment of Renal Disease.—

The drugs really beneficial can be enumerated almost on the fingers of two hands. When once nitroglycerine with the nitrites, the iodides, iron, digitalis and strychnia are mentioned, much of what is beneficial has been brought forward.

The value of nitroglycerine is undoubted in the high-tensioned pulse condition in a contracted kidney. The failure in some cases to obtain results may be partly due to timidity in pushing the drug to its physiologic limits.

Immediate relief of the dyspnea of interstitial nephritis may often be obtained by the use of amyl nitrite.

The iodides are given by some with benefit—in theory they tend to check connective tissue formation.

When large doses of the tincture of the chloride of iron are given, the bowels must be carefully regulated. The form of iron best borne is Basham's mixture in half-ounce to ounce doses, or in the form of the tincture of citro-chloride.

For the heart, when edema develops, digitalis is of service. MATHEWS prefers the fat free tincture, some prefer the infusion.

Strychnia is sometimes valuable as a cardiac and respiratory tonic.

As to the value of morphia and its derivatives there is some difference of opinion. Osler and Rose Bradford advocate it in uremic convulsions and severe dyspnea, but Dickinson and Hare oppose its use.

When free watery movements are desired, sulphate of magnesia and elaterium are of use.

In uremic convulsions and coma, nitrite of

amyl, chloroform and nitroglycerine are of value. Chloral and the bromides may aid in controlling the convulsive seizures.

In the light of the recent researches on chloride elimination in nephritis, the use of salt solution is, to say the least, of doubtful therapeutic utility.—Mathews, *Providence Medical Journal*, 1906.

The Bile Acids as a Remedy.—CROFTON states that the bile acids may be employed with propriety in three conditions, all casually related to one another, namely, in intestinal putrefaction, in hepatic insufficiency and in gall-stone disease. The acids are best given in the form of the sodium salts, as the free acid may be irritating to the stomach. The dose varies according to the case. Usually one-half grain doses are given, frequently until the desired results are obtained. There is never any danger of giving too much, since the sodium glycolate in no way deranges the stomach, and if given in very large doses, produces a diarrhea which promptly carries off the surplus.—*New York Medical Journal*, April 21, 1906.

Treatment of Splenic Anemia.—BRAMWELL gives ferri carb. gr. 5, thrice daily and exposure of the splenic area once daily to X-rays.

The spleen diminished in size and the red count improved.

In another case, boric acid in 20 gr. doses with quinine hydrobromate, grs. 5, and tinct. ferri perchlor. min. 10, allayed the febrile symptoms, but did not diminish the spleen in size. The fall in temperature seemed to have some relation to the exhibition of boric acid.—*The Journal of Tropical Medicine*.

Coley's Serum in Inoperable Sarcoma.—The value of COLEY's paper lies in the fact that he is able to give his final results. Thirty-six cases in which the tumor disappeared under treatment are reported.

In 26 cases the patients were well for periods varying from 3 to 13 years. In 5 cases a fatal recurrence took place after a well period varying from 6 months to 3¼ years.

In carcinoma the serum has merely an inhibitory but not a curative action. The serum consists of the toxins of the streptococcus of erysipelas, together with the toxins of the bacillus prodigeosus. COLEY appears to justify his claim that the serum injection should be used as a routine after all primary operations for sarcoma and carcinoma.—*Am. Jour. Med. Sciences*, March, 1906

NEUROLOGY.

Conducted by

C. W. HITCHCOCK, M. D.

The Examination of the Spinal Fluid in Dementia Paralytica.—The columns of this journal, in a recent issue, contained a valuable article by Dr. Simpson of the staff of the Eastern Michigan Asylum, detailing his work in this same line.

BROOKS, of Buffalo, also reports his work of a similar nature. After describing his own technic and the gross results of his examination, he concludes, judging from their observation, that it is not yet possible to make a positive diagnosis of dementia paralytica from the cytological examination of the spinal fluid, but that the method bids fair to rank as a possible aid to diagnosis in some doubtful cases.

He finds it also of possible service in other conditions, as in the diagnosis of a case of meningeal syphilis, associated with meningitis, in which was found an increase both of lymphocytes and polynuclear leucocytes. In one case the diagnosis, which for weeks had been undetermined was thus established and led to the proper treatment.

BROOKS further concludes that with the withdrawal of not more than 5 c. c. of fluid (all that is necessary in any case) and the detention in bed of the patient for three or four days, the operation is attended with no danger, provided, of course, that reasonable asepsis is always maintained. In 38 punctures he had had no mishap nor seen any ill effect whatever.—*Med. Rec.*, June 30, 1906.

Reception Hospitals for the Insane.—A crying need in most of our large cities is some appropriately equipped hospital where cases of insanity may be received and detained, either pending commitment proceedings or, in some cases, for such short periods as may be necessary. Great injustice is not seldom done the unfortunate insane either by incarceration in unsuitable places such as jails and prisons, where there is lack of any suitable conditions for detention and treatment.

While this, of course, has not been wholly neglected in New York, a city which has done so much for its dependent classes, we are glad to see that its insane are to be still better temporarily provided for in a new Reception Hospital, the Board of Estimates and the Aldermen having authorized the purchase of desirable property between 73rd and 74th streets and overlooking the

East River, which will be leased to the State.—*Med. Rec.*, June 30, 1906.

Trigeminal Nevi and Intracranial Hemorrhage.—H. CUSHING, Baltimore, calls attention to a possible connection between congenital birthmarks in the facial region and spontaneous intracranial hemorrhages. Noting the topographical correspondence that often exists between these birthmarks and the distribution of branches of the fifth nerve, he remarks that there is much in favor of Baerensprung's idea that these nevi correspond with lesions occurring in the Gasserian ganglion. He reports three cases of such nevi in which certain complications occurred, due, as he interprets them, to the fact that the cutaneous lesion may be accompanied by a similar condition of vascularity of the dura mater which is sensitized by filaments from the same nerve. In the three children, all of whom were born with vascular nevi corresponding to branches of the fifth nerve, there occurred intracranial hemorrhages and convulsions, and in two of the cases contralateral spastic hemiplegia. In one of the cases which came to postmortem a notable fact was the smallness of the Gasserian ganglion and a meningeal nevus on the same side as the external one. The same condition of meningeal nevus existed in a second child who was operated on. In the review of the literature CUSHING has found one report, by Strominger, of a similar nevroid condition of the meninges leading to hemiplegia, associated with a facial cutaneous nevus in the trigeminal region of the same side. He sums up, in substance, as follows: Vascular nevi of the face have a tendency to correspond with the distribution of one or more main branches of the trigeminus. These cutaneous nevi may be associated with some degree of hypertrophy of the deeper tissues of the face, with an enlargement of the eye and also with a corresponding nevroid condition of the dura, which may lead to a spontaneous intracranial hemorrhage, with results similar to those of the subdural hemorrhages in infancy from other causes. Absorption of the clot may lead to cortico-dural adhesions, which, in favorable cases like the second one reported by him, can be separated with benefit as regards the convulsion, etc., provided measures such as carotid ligation are taken to prevent complications from hemorrhage.—*Jour. A. M. A.*, July 21, 1906.

GENITO-URINARY SURGERY.

Conducted by

W. A. SPITZLEY, M. D.

Diagnosis and Surgical Treatment of Tuberculosis of the Kidney.—Tuberculosis as a distinct pathological process of the kidney was first described as early as 1767 by Morgagni; during the following century a number of observations of such a process were made; but it was not until 1883 that Bahes established the specific nature of the affection by finding the bacilli in the urine.

Both clinical and experimental evidence points to the hematogenous origin of tuberculosis of the kidney, the bacilli entering the circulation of the alimentary or respiratory tract; localization occurs where there are large quantities of blood, together with slowing of the current, namely, in the glomeruli. Traumatism frequently acts as a factor predisposing to localization. The progress of the disease is of course downward first to the pelvis of the kidney, then to the ureter and finally to the bladder.

The disease is essentially one of youth and early adult life and occurs more commonly in women than in men; but one kidney is usually involved except in those cases where general tuberculosis exists; then the disease is more often bilateral.

Many symptoms are mentioned as of diagnostic value; the author has found that in his experience the one that was present in almost every instance is vesical irritation. Frequent nocturnal urination was present in more than 90% of his cases; and in men a burning sensation in the perineum followed each urination. Hematuria was found in but one out of 17 cases; pain in four or five.

Absolute diagnosis is shown by the presence of tubercle bacilli; care must be taken not to confuse the smegma bacillus with the tubercle bacillus; and it is further necessary to determine that the tubercle bacilli come from the ureters and not, for instance, from the seminal vesicles; in other words, ureteral catheterization is an almost necessary aid in diagnosis.

Failure to find the germs does not necessarily mean that they are not present; in such instances, where the symptoms strongly point to the existence of the condition, guinea pig inoculation should be resorted to.

Medical treatment, except as demanded by co-existing lesions elsewhere, is of little or no value. In unilateral tubercular kidneys, nephrectomy should be done; in double involvement, effort should be made to determine which kidney is least involved and the worst one, of course, removed. In bilateral cases with large pyonephroses, nephrotomy is the proper mode of procedure. To insure the best results, as much of the involved ureter as possible should be removed; excision of part of the bladder wall does not promise much additional benefit.—*LOWER, Surg. Gyn. and Ob., July, 1906.*

The Treatment of Ectopia Vesicae.—Operations which provide only for covering over the

defect in the abdominal wall are incomplete and inefficient in that they do not provide for the retention of the urine in the newly prepared receptacle except through the employment of some kind of a mechanical contrivance. The reason for using this mechanical aid lies in the fact that lateral tension is so great that no vesical sphincter can be made to hold; hence there is no anatomical structure to control the bladder contents.

In order to overcome this very great objection to the operation as it had previously been done, the author sought a way to relieve the lateral tension on the freshened edges of the defect. He found a method tending toward the accomplishment of that end by producing a bilateral separation of the sacro-iliac synchondrosis; this permitted a very complete approximation of the two halves of the pelvis at the symphysis, as well as a more perfect and less tense coaptation of the wound edges. The separation of the pelvic bones is attended with little danger in patients eight or less years of age. Where there is well marked diastasis at the symphysis, the primary separation at the back makes perfect approximation, anteriorly, possible; and the additional rest and fixation obtained in this way is of much importance as an aid to the healing process of the soft tissues. None of the author's cases has complete voluntary retention, when they are in the upright position, without the aid of a small pressure pad over the proximal end of the urethra: in the recumbent posture, voluntary control is nearly perfect, sometimes even throughout an entire night. Frequently, shortly after operation, control is perfect; later it is lost: this is due to the fact that the two sections of the pelvis reassume their former positions and the neck of the bladder and prostatic portions of the urethra are pulled upon to such an extent that the muscular ring (sphincter vesicae) can no longer be brought into play. In extreme epispadias or even partial ectopia, continence can usually be established by tightening the muscular ring through excision of a wedge-shaped section and suturing of the two sides.

It is particularly difficult to keep the bones at the symphysis together, the wire tending to cut out. Preliminary bandaging to the child, with a broad rubber band about the hips and pelvis, continued for a certain period daily during a sufficiently long time the author believes would be a most valuable preparation for later operation. This, supplemented by division at the back at the time of operation, would make it possible to bring together permanently the two halves of the pelvis in front and would convert the transversely placed oval defect of the abdominal wall into a narrow vertical slit: and in all probability one would then have the same satisfactory results as in the less severe types of the deformity.—*TRENDELENBURG, Annals of Surgery, August, 1906.*

OPHTHALMOLOGY.

Conducted by

W. R. PARKER, M. D.

Eye Affections Due to Autointoxication.—Autointoxications may be conveniently divided into the Histiogenic and Enterogenic. Eye diseases due to the former class are fairly familiar to us, since they include those dependent on gout, diabetes, uraemia, chlorosis, Graves's disease, pregnancy, etc. But the latter class of intoxications has been much less studied, and of eye affections due to such, nothing is said in our text-books, while records of them in the clinical journals are very few indeed. ELSCHNIG has directed his attention to the subject for the last ten years and his paper is founded on cases occurring in his private practice during that period.

The recognition of gastro-intestinal autointoxication is perhaps not very easy. The most definite symptom of it is the presence of abnormal organic compounds, such as phenol and other ethereal sulphates, in the urine. The estimation of these bodies, however, hardly comes within the scope of every day urine testing, and a more practical indication is the presence of indican in increased amount in the urine. This, as a rule, means decomposition of albumin in the digestive tract, though it may also be present in fevers, chlorosis, leukaemia and neurasthenia. It is said not to be present in simple constipation.

It is the nervous apparatus of the eye, and the corneo-sclera and uvea which are especially prone to react to the gastro-intestinal toxins.

Nervous apparatus. It is recognized in text books of neurology that gastro-intestinal auto-intoxications may give rise to various paralyses of the internal and external eye organs; the symptoms are similar to those of (exogenic) ptomaine poisoning; the prognosis appears to be good only in the slighter cases. ELSCHNIG has one case of this nature to record:

A bank clerk, pale, dyspeptic, with offensive breath; not syphilitic. Disturbance of vision for a week. Right pupil half-wide, motionless; distant vision normal; punctum proximum 15 cm. with 3D (with the other eye 12 cm. without a glass). There was no indication of systemic nervous disease. The urine gave an increased indican reaction. The pupil and accommodation became normal under treatment directed to the digestive organs.

Optic nerve affections, due solely to this cause, seem to be very uncommon; but more than one writer has put forward the view that digestive disturbances may play an important though accessory part in the production of tobacco and alcoholic amblyopia.

As regards functional nervous affections, ELSCHNIG refers to cases of scintillating scotoma, as well as various neurasthenic symptoms, which seem to arise in connection with stomach troubles, chronic intestinal catarrh or constipation, and are dissipated when those conditions are treated; but he remarks that it must always be doubtful whether the symptoms are really due to auto-intoxication, or to reflex irritation from the digestive organs.

Affections of the corneo-sclera and uvea. A

man, aged 30, had suffered for several years from repeated attacks of superficial marginal ulcers of the cornea, some of them severe and accompanied by slight iritis. He had no general disease, nor could any local cause for the attacks be discovered in lids, conjunctiva, or nose. The urine gave an increased indican reaction, but was otherwise normal. Enquiry into his mode of life elicited the fact that with a sedentary occupation he combined great irregularity in his meals, and sometimes ate so voraciously as to produce vomiting. He suffered also from constipation. A diet cure, undertaken in the summer of 1903, had a considerable effect in diminishing the attacks, but with a return to his former habits of life they recurred, until, in March, 1905, his doctor instituted a strict dietetic regime, and since that date he has had no more attacks of keratitis.

That relapsing scleritis, in the great majority of cases, owes its origin to digestive disturbance, seems to ELSCHNIG indubitable. He has seen no case in which acquired syphilis could be demonstrated as the cause of the affection; no case in which, even though certain signs suggestive of hereditary syphilis were present, antisyphilitic treatment produced any appreciable effect on its course. The only general treatment, which in severe cases has produced any amelioration, either in the attack itself or in the tendency to recurrence, has been one founded on regulation of the diet and repeated disinfection of the digestive canal.

What is true of the deeper forms is also true of the rarer superficial type, or episcleritis periodica fugax.

The gastro-intestinal factor is of still more moment in certain affections of the uveal tract, and there are in particular two forms of iridocyclitis in which an autointoxication may be confidently looked for, either as the sole, or as an important accessory cause. The first occurs especially in women, and is characterized by a chronic course, deposits in the anterior chamber, and opacities in the vitreous. The patients give the history of constant digestive irregularities and constipation. An acetone-like odor of the breath and the presence of indican in the urine point to the presence of toxins of intestinal origin; and a therapeusis directed towards the digestive troubles is the only one which influences the ocular condition for the better.

The second form is a recurrent iritis; the subjects of it are apparently quite healthy individuals, often men about the middle period of life; one eye is attacked by acute iridocyclitis, recovers, and after a longer or shorter interval, a second attack occurs, and this process is repeated until in many cases, the eye becomes blind. Antisyphilitic remedies are not of the slightest use, but, on the other hand, treatment of the digestive organs produced complete arrest of the process in five out of seven cases, and in the other two, in which it was very imperfectly carried out, there was considerable amelioration.—*Klin. Monat. f. Auf.* Nov 1905.

RADIOGRAPHY AND ACTINOTHERAPY

Conducted by

H. R. VARNEY, M. D.

A Modification of Benoist's Penetrameter.

PHALER considers the lack of methods for exact measurement of the Roentgen ray, one of its greatest drawbacks for use in medicine and surgery. Because the terms "soft," "hard," or "medium," as applied to tubes, depend upon the operator who is using them, this means of designation is unreliable and inaccurate.

Because the resistance of tubes varies independently of the vacuum or the quality of the rays, estimating their penetrating power by measuring the parallel spark-gap is also unreliable.

Most uniform in its application has been the use of the hand and its shadows upon the fluoroscope; this however on account of its serious results to the hands of the radiologist, is wholly impractical.

To Benoist is due the most valuable device, of the present day, for estimating the quality of rays given off by each tube. This scale measures either the penetrating power, or the quality of the ray. The writer has termed the Benoist scale a "penetrameter," a term that he considers less confusing than "radio-chronometer," because of its similarity to the term "chromoradiometer" (Holzknecht).

The writer has modified this apparatus so as to overcome its two serious objections: First, he has so arranged it that it can be read while the tube is being used for application of the ray, and second, he has overcome the danger to the operator, while reading it.—*Arch. of Physiolog. Therapy*, June, 1906.

Notes on the Use of the Milliampere Meter in X-Ray Measurements.—JONES states that no one who has used a milliampere meter for regular work, will doubt its value in the measurement of the workings of an X-ray tube. Many practical workers however doubt its accuracy. The writer states also that the questions to be settled before the milliampere meter can be accepted as reliable are as follows:

1. Does X-ray production bear a direct relation to the magnitude of the current through the tube? This question is of prime importance and has not yet been fully answered.

2. What difference may be expected to exist between the amount of X-ray produced within the tube and the amount actually emitted and available for use outside?

3. Can the milliampere meter be trusted to

give a measure of that part of the current which is concerned in the production of the X-ray, and that part only?

4. How may the reading be interpreted to suit different distances of the radiant points from the surface radiated?

In reply to the first question, the writer says that if the vacuums of all tubes were equal, then the measurements would be of value.

In considering the second question, he says the milliampere is of no value, as it is impossible to know the magnitude of the ray produced as compared with the amount available for use outside. Holtzknecht, Sabourand, and others have taken this factor into consideration in devising their color indicators which are extremely sensitive to the action of the ray and determine the activity of the individual tube, by slight changes in color.

The third question, he answers in the affirmative.

The fourth question is readily answered, for it involves only the measurement of the distance from the anti-cathode to the skin surface.—*Arch. of the Roentg. Ray*, June, 1906.

A Simple Penetrameter.—Because of the danger to the hand of the operator which results from the constant use of it to test the quality of the rays, a substitute which is both inexpensive and practical, has been suggested by SCHILLING. A skeleton hand has been fitted into a glove, the glove then filled out with wax. At the wrist, a handle can be adjusted, and this protected by a curved piece of lead.

The wax substitutes the fleshy part of the hand, and casts a like shadow, while the bones are identical.—SCHILLING, *Fortsch. auf dem Geb. der Roentgenstr.*, March, 1906.

Roentgen Therapy in White Swelling and Bone Tuberculosis.—REDARD reports rapid cures in chronic tuberculous osteitis by the Roentgen rays when the lesions are superficial. Deep lesions are less favorable, as Potts disease and hip disease; yet local improvement is noticed.

The writer states this is true even where there is a sinus and that ankylosis is less liable to occur because of the stimulation of the light which favors the production of fibrous tissue.

When possible he attacks the lesion from several sides.—*Arch. of Electric Medicine*, Feb., 1906.